2017

SASP

AUA SELF-ASSESSMENT STUDY PROGRAM

American
Urological
Association
Education & Research, Inc.
Advancing Urology™

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2017 AUA Self-Assessment Study Program

Accreditation: The American Urological Association (AUA) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation Statement: The American Urological Association designates this enduring material for a maximum of 20.00 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in this activity.
Original Release Date: January 2017 **Expiration Date**: December 2019

PA
AAPA CATEGORY 1
SELF-ASSESSMENT CME

AAPA Credit Designation Statement: This Self-Assessment CME program has been reviewed and is approved for a maximum of 20.00 *AAPA Category 1 Self-Assessment CME credits* by the Physician Assistant Review Panel. Approval is valid one year from the release date of January 1, 2017. Physician Assistants should claim only the credit commensurate with the extent of their participation in the activity. This program was planned in accordance with AAPA's CME Standards.
Original Release Date: January 2017 **Expiration Date**: December 2017

Other Learners: The AUA is not accredited to offer credit to participants who are not MDs or DOs. However, the AUA will issue documentation of participation that states that the activity was certified for *AMA PRA Category 1 Credit™*.

Estimated time for study, test completion, and reference reading for each SASP is 20 hours.

Other Learners: The AUA is not accredited to offer credit to participants who are not MDs or DOs. However, the AUA will issue documentation of participation that states that the activity was certified for *AMA PRA Category 1 Credit™*.

Target Audience: This self-assessment program is designed for practicing urologists, Board candidates, residents and/or physician assistants.

Purpose/Need: Urologists and other health care providers need to assess their knowledge of urology. Identified gaps in this knowledge can lead to individualized, practical educational activities, which will result in improved patient care.

Method of Participation: Participants will receive an SASP booklet, answer sheet, and return envelope with cardboard insert. The SASP is designated for a maximum of 20.00 *AMA PRA Category 1 Credits™*. To earn credit, participants must read the educational material provided, designate answers for each of the 150 multiple-choice questions, and return the answer sheet for evaluation, answering 50% of the test questions correctly.

Learning Objectives: After completion of this continuing medical education activity, including this examination, participants will be able to:

- assess their knowledge of urology
- demonstrate an increased knowledge base of urology
- apply increased knowledge to improve quality of patient care
- evaluate strengths and weaknesses in urology upon review of their personalized participant profile
- develop a personalized study program

Evidence Based Content: It is the policy of the AUA to ensure that the content contained in this CME activity is valid, fair, balanced, scientifically rigorous, and free of commercial bias.

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- Peer review for valid, evidence-based content of all materials associated with an educational activity by the course/program director, editor, and/or Education Content Review Committee or its subgroup.
- Limit content to evidence with no recommendations
- Introduction of a debate format with an unbiased moderator (point-counterpoint)
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Self-Assessment Study Program

INTRODUCTION

This Self-Assessment Study Program is designed to provide practicing physicians, Board candidates, and/or residents with an assessment of their knowledge of urology and to be a valuable learning experience which should add significantly to their store of knowledge. In addition, expectations are there would be an improvement in the quality of care delivered to their patients. Relative strengths and weaknesses in urology will be immediately apparent upon review of the personalized Participant Profile. All data concerning results of the Study Program are strictly confidential and elaborate security measures have been set up in the Office of Education to ensure that only the individual participant has access to their scores.

The Self-Assessment Study Program may be completed under either open or closed book test conditions. We urge participants to select the examination condition with which they are most comfortable. Open book implies the use of references and other resource materials. Closed book implies that reference materials are not used. To ensure a fair comparison, peer group reports are compiled separately for the "open book" and "closed book" groups.

Participants who desire CME must score a minimum of 50% and may take the SASP under either closed or open book test conditions. An additional answer sheet is provided to retake the examination for credit if the 50% benchmark has not been met.

The purpose of the program is self-assessment and learning, **NOT** an evaluation of the participant by the American Urological Association or any other agency. The examination is designed to be a valuable learning experience as well as a self-evaluation and therefore is considered to be a valid measure regardless of open or closed book conditions.

The examination items require a recall of medical knowledge and application of clinical experience. Time should be taken to consider each item carefully. We strongly recommend blocking out three to four hours to take the examination in one, or at most, two sittings. The examination should not be stretched over multiple sessions. Participants should select one answer that they feel is the best. At the completion of the exam, it is important for the learner to read very carefully the comments and recommended resources as to why the answer is deemed to be the "best answer".

Immediately after completion, participants return their answer sheet to the AUA Office of Education. **EACH WEEK** answer sheets are scored and personalized. Participant Profiles are compiled and mailed along with an evaluation or a second answer sheet to retake the exam. Certificate of Completion for CME credit is available online at www.AUAnet.org/University.

At the end of the year, peer group reports will be compiled. In order for scores to be included in the peer group data, completed answer sheets must be in the Office of Education before October 1, 2017. After the final weekly scoring, peer group reports will be sent to all participants who returned an answer sheet. Included in this report will be an overview of your personalized Participant Profile.

Finally, we hope that the Self-Assessment Study Program is found to be a stimulating, informative, and beneficial tool for Continuing Education as you strive for high-quality patient care.

INSTRUCTIONS

PLEASE READ CAREFULLY

I. ASSEMBLE MATERIALS

1) SASP PART I: 150 multiple-choice questions (front section of book).
   SASP PART II: Explanations, comments, and references (back section).
2) Answer Sheet: Two return address tabs should be attached to the bottom.
3) A No. 2 Pencil: Answer sheets completed in ink will not be scored.
4) Exam Trustee Envelope: Should include protective cardboard.

II. PREPARE YOUR ANSWER SHEET

Please note: The stamped answer sheet tracking number (not to be confused with your AUA Customer ID Number) is used by AUA Staff during scoring.

1) **Identification Information.** Complete the information by writing in numbers and blackening the corresponding grid numbers.

   A. **Years Out:** Write the number of years since you completed residency training. If this is less than 10 years, the first digit will be "0". If you are currently in residency, record this number as "99".
   B. **Up to 20 CME Credits:** Please mark the number of credits you wish to claim.
   C. **Book Year:** Write "17" here.
   D. **AUA ID Number:** Using two leading zeros, write your 6-digit AUA Customer ID Number here.
   E. **Date:** Write the date you take the exam.
   F. **Teaching Load:**
   None indicates the participant devotes all of his time to private practice. Although he may have a clinic appointment with a medical school in the area, there is no interface with medical students, residents, or interns.
   Light indicates the participant devotes the majority of his time to private practice; however, he also has a faculty appointment which requires that he participates in rounds, conferences, or lectures approximately 5-10 times per year.
   Medium indicates the participant, in addition to private practice, has an active teaching service which requires at least weekly contact with medical students, residents or interns.
   Heavy indicates the participant devotes the majority of his time to a faculty appointment which includes daily contact with medical students, residents, or interns in the capacity of teaching or supervising their activities.
   G. **Exam Type:**
   Open book indicates that reference material will be used during the exam.
   Closed book indicates that no reference material will be used during the exam.

2) **Return Address Tabs.** Please use a permanent address when completing these tabs. Do not detach from answer sheet. One tab will be used to send your personalized Participant Profile. The other will be used to send your Peer Group Report in late 2017.

III. BEGIN THE EXAMINATION

1) Note that the sequence of questions on the answer sheet goes down the page and not across the page.
2) Block out 3-4 hours to read and answer the exam questions.
3) Mark ONLY ONE ANSWER.
4) Erase changes completely.

IV. AFTER COMPLETING THE EXAM

1) **IMPORTANT!!!! Make a copy of your completed answer sheet.**
2) Mail your answer sheet in the envelope provided with the protective cardboard. **Do not fold the answer portion of the sheet.**
3) Allow 3-4 weeks for the return of your personalized Participant Profile and Evaluation form, or a second answer sheet to retake the exam. Certificate of Completion for CME credit is available online at www.AUAnet.org/University.
4) Begin studying Part II of the SASP (back section of SASP booklet).

IMPORTANT!!! CME Credit Expiration Dates

For Physicians

Products include SASP Booklets, USB, Online, and *Qstream*

Any 2017 SASP	December 31, 2019
Any 2016 SASP	December 31, 2018
Any 2015 SASP	December 31, 2017

Please note: CME Credits expire after three years of Original Release Date.

For Physician Assistants

Products include SASP Booklets, USB, Online, and *Qstream*

Any 2017 SASP	December 31, 2017
Any 2016 SASP	December 31, 2016
Any 2015 SASP	December 31, 2017

All data concerning results of the study program are strictly confidential and elaborate security measures have been set-up in the Office of Education to ensure that only the individual participant has access to his/her scores. For additional information regarding this program, please contact: American Urological Association Education and Research, Inc. (All rights reserved.) Printed in USA 01/2017.

ABU/AUA Examination Committee
Common Urology Abbreviations

ACE	Angiotensin converting enzyme
ACTH	Adenocorticotrophic hormone
ADH	Antidiuretic hormone
AFP	Alpha-fetoprotein
AIDS	Acquired immune deficiency syndrome
beta-hCG	Beta human chorionic gonadotropin
BCG	Bacillus Calmette-Guerin
BEP	Bleomycin, etoposide & cisplatin
BPH	Benign prostatic hyperplasia
CIC	Clean intermittent catheterization
CAH	Congenital adrenal hyperplasia
CIS	Carcinoma in situ
CMG	Cystometrogram
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
CVA	Cerebrovascular accident
DDAVP	Vasopressin synthetic analog
DES	Diethylstilbestrol
DMSA	Dimercaptosuccinic acid
DRE	Digital rectal exam
DTPA	Tc-99m Pentetate
DVT	Deep venous thrombosis
EHL	Electrohydraulic lithotripsy
EKG	Electrocardiogram
EMG	Electromyogram
ESRD	End-stage renal disease
5-FU	5-fluorouracil
FSH	Follicle stimulating hormone
GFR	Glomerular filtration rate
GnRH	Gonadotropin releasing hormone
HIV	Human immuno deficiency virus
HPF	High power field
^{125}I	Iodine^{125}
ICSI	Intracytoplasmic sperm injection
I.V.	Intravenous
IVC	Inferior vena cava
IVP	Intravenous pyelogram
IRB	Institutional Review Board
KUB	Kidney, ureter, bladder
LDH	Lactate dehydrogenase
LH	Luteinizing hormone
LH-RH	Luteinizing hormone releasing hormone
LPP	Leak point pressure
LUTS	Lower urinary tract symptoms
M-VAC	Methotrexate, vinblastine, Adriamycin (doxorubicin), cisplatin
MAG-3	Mercaptoacetylglycine

MIBG	Iodine-131-meta-iodobenzylguanidine
MRI	Magnetic resonance imaging
MVC	Motor vehicle collision
NPO	Nothing by mouth
NSAIDS	Nonsteroidal anti-inflammatory drugs
NSGCT	Nonseminomatous germ cell tumor
PCNL	Percutaneous nephrolithotomy
PDE-5	Phosphodiesterol inhibitor 5
PET	Positron emission tomography
PGE-1	Prostaglandin E-1
PIN	Prostatic intraepithelial neoplasia
PSA	Prostate specific antigen
PT	Prothrombin time
PTT	Partial thromboplastin time
PUV	Posterior urethral valve
PVR	Postvoid residual
QD, QHS	Dosing
XRT	Radiation therapy
RBC	Red blood cell count
RCC	Renal cell carcinoma
RL/NS/D5W	Ringer's lactate/Normal saline Dextrose 5% water
RPLND	Retroperitoneal lymph node dissection
RTA	Renal tubular acidosis
SIADH	Syndrome of inappropriate antidiuretic hormone
SSRI	Selective serotonin reuptake inhibitors
SWL	Shock wave lithotripsy
TPN	Total parenteral nutrition
TRUS	Transrectal ultrasonography
TUIP	Transurethral incision of prostate
TUMT	Transurethral microwave therapy
TUNA	Transurethral needle ablation
TUR	Transurethral resection
TURP	Transurethral resection of prostate
TURBT	Transurethral resection of bladder tumor
UPJ	Ureteropelvic junction
UTI	Urinary tract infection
VCUG	Voiding cystourethrogram
VDRL	Venereal disease research laboratory
VEGF	Vascular endothelial growth factor
VHL	Von Hippel - Lindau
VUR	Vesicoureteral reflux
WBC	White blood cell count
XRT	Radiation therapy

Normal Laboratory Values

General Chemistry

Electrolytes

Na	135 – 145 mEq/L
K	3.5 – 5.0 mEq/L
Cl	120 – 130 mEq/L
CO_2	22 – 26 mEq/L
Ca	8.5 – 10.5 mg/dL
PO_4	2.6 – 4.5 mg/dL

Blood Urea Nitrogen (BUN)	8 – 20 mg/dL
Creatinine	0.5 – 1.5 mg/dL
Creatinine Clearance	50 – 125 mL/min
Glucose (fasting)	70-100 mg/dL
Prostate Specific Antigen (PSA)	< 4 ng/mL
Serum Albumin	3.4 - 5.4 gm/dL

Acid Phosphatase	0 – 0.8 U/L
Alanine aminotransferase (SGPT)	10 – 55 U/L
Alkaline phosphatase	45 – 115 U/L
Alpha-feto protein (AFP)	0 – 10 IU/mL
Beta–hCG	0 – 10 mIU/mL
Amylase	50 – 120 U/L
Bilirubin	0 – 0.4 mg/dL
Lactate dehydrogenase (LDH)	110 – 210 U/L
Uric acid	3.6 – 8.5 mg/dL

Hemoglobin	13 – 18 g/dL
White Blood Count (WBC)	5 – 10,000/cu mm
Platelets	150 – 350,000/cu mm

Endocrine

Aldosterone	4 – 31 ng/dL
Calcitonin	0 – 28 pg/mL
Catecholamines	< 1000 ng/L
Cortisol	0 – 10 μg/dL
Epinephrine	0 – 110 pg/mL
17-Hydroxysteroids	3 – 14 mg/day
17-Ketosteroids	8 – 20 mg/day
Metanephrines	0 – 0.9 mg/day
Parathyroid Hormone (PTH)	10 – 60 pg/mL
Plasma Renin Activity (PRA)	0.5 – 1.6 ng/mL/hr
Testosterone	300 – 1000 ng/dL
Vanillylmandellic acid (VMA)	1.4 – 6.5 mg/day

Follicle Stimulating Hormone (FSH)	1 – 15 mIU/L
Luteinizing Hormone (LH)	3 – 18 mIU/L

Arterial Blood Gases

PO_2	75 – 100 mmHg
PCO_2	35 – 45 mmHg

1. Oliguria associated with acute tubular necrosis is characterized by which urinary findings:

   A. ↑ sodium, ↓ urea, ↓ osmolality.
   B. ↓ sodium, ↓ urea, ↓ osmolality.
   C. ↓ sodium, ↑ urea, ↓ osmolality.
   D. ↑ sodium, ↑ urea, ↑ osmolality.
   E. ↓ sodium, ↓ urea, ↑ osmolality.

2. The most important factor responsible for the frequent recurrence of UTIs in an otherwise healthy, young woman is:

   A. adhesive fimbriae of uropathogens.
   B. specific receptors on urothelial cells.
   C. presence of pathogenic coliforms in stool.
   D. feminine hygiene practices.
   E. method of contraception.

3. The antimicrobial agent that can be used at the usual dosage in an azotemic patient is:

   A. nitrofurantoin.
   B. sulfamethoxazole.
   C. doxycycline.
   D. trimethoprim.
   E. fluconazole.

4. A 23-year-old woman suffers a complex pelvic fracture in an MVC. A cystogram reveals limited extraperitoneal extravasation of contrast at the bladder neck. The bladder is compressed by a pelvic hematoma and an anterior vaginal laceration is also present. No other injuries are noted, and she is hemodynamically stable. Treatment should be:

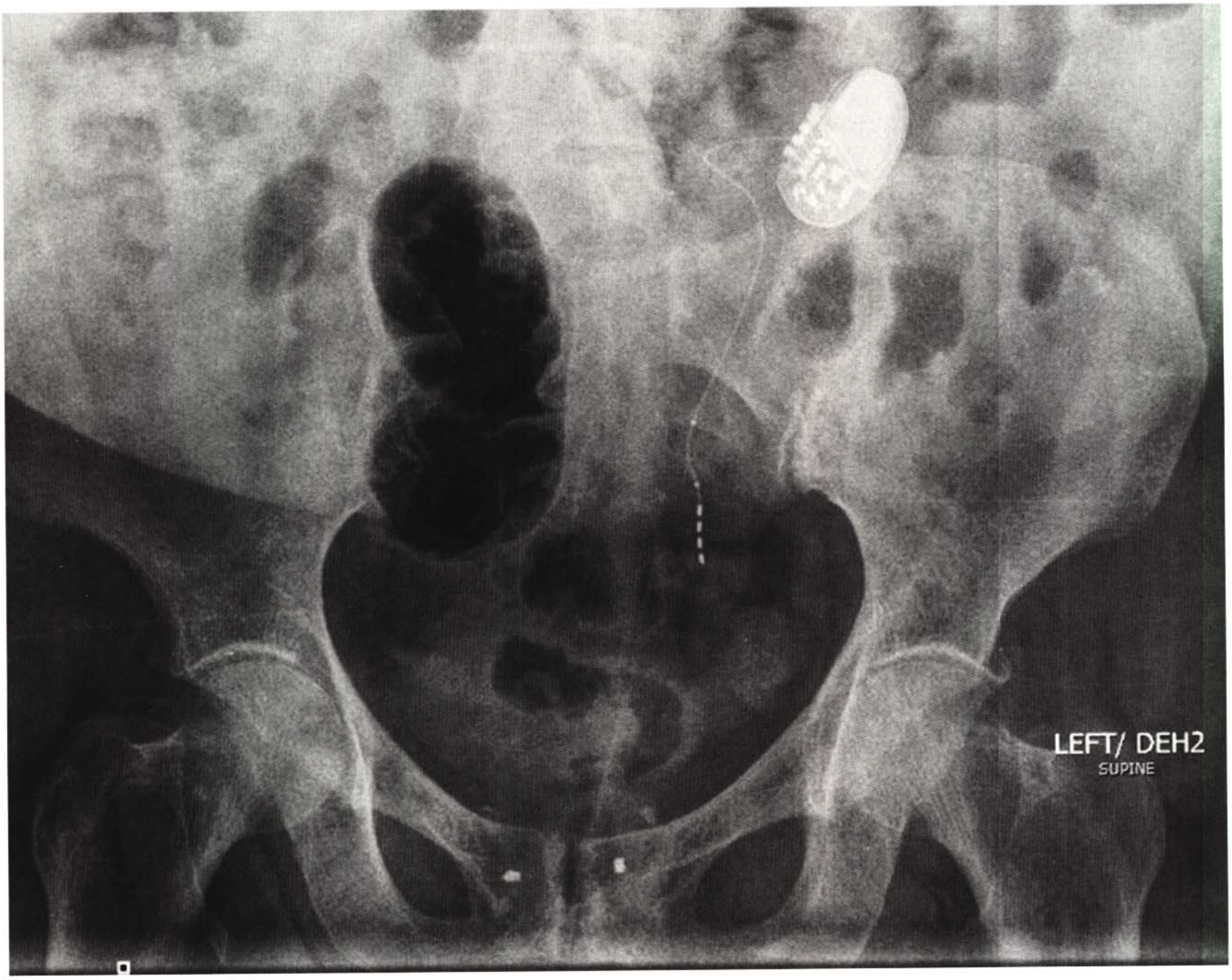
   A. urethral catheter drainage.
   B. suprapubic cystostomy.
   C. urethral catheter placement and repair of vaginal lacerations.
   D. bladder repair and vaginal packing.
   E. repair of vaginal and bladder lacerations.

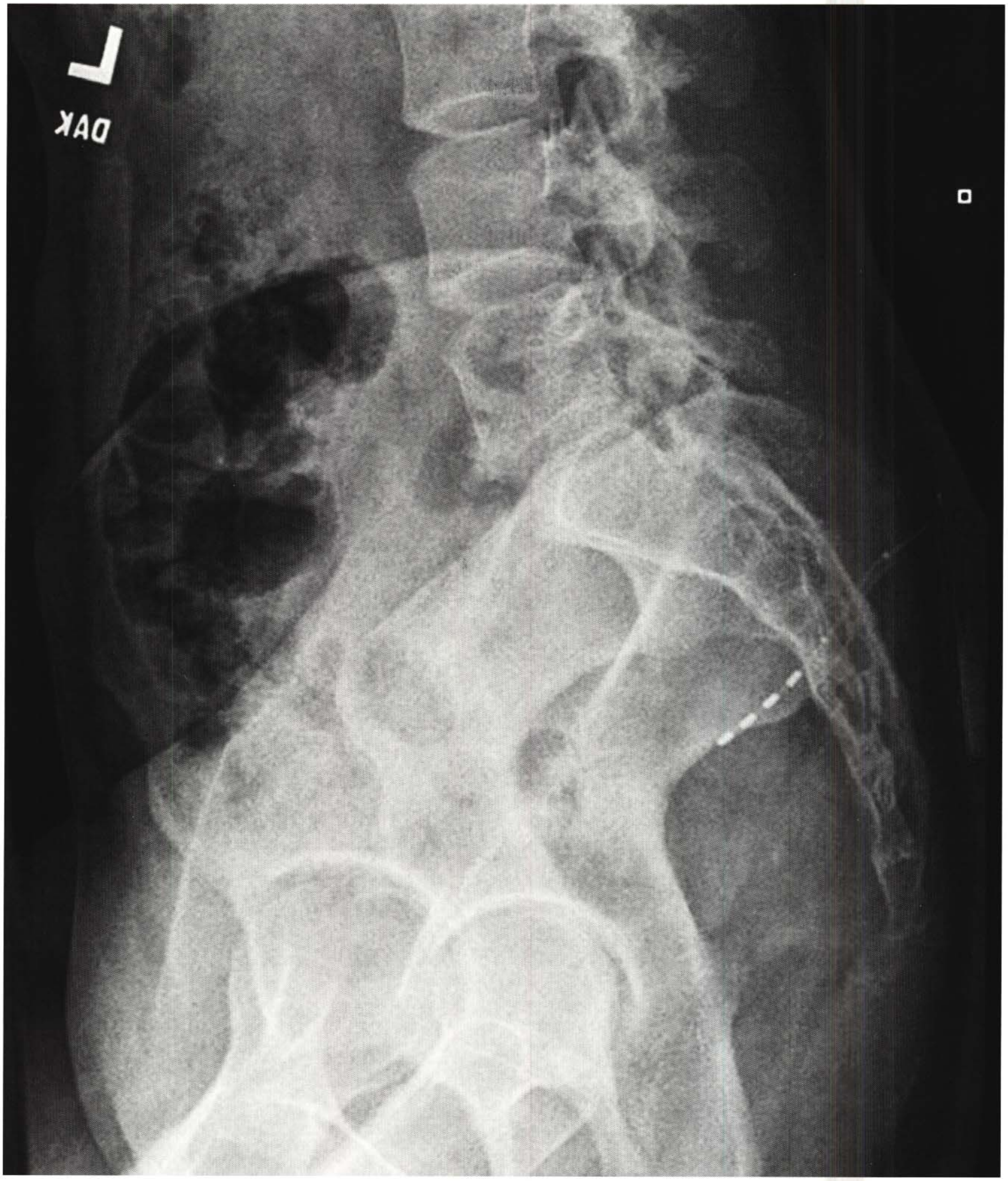
5. A two-year-old boy with normal penile development is explored for non-palpable testes through bilateral groin incisions. On each side, the vas deferens and spermatic vessels end blindly at the internal ring. The next step is:

   A. observation.
   B. CT scan of abdomen.
   C. serum inhibin B and abdominal ultrasound.
   D. FSH, LH, testosterone level, and stimulate with hCG.
   E. diagnostic laparoscopy.

6. A 55-year-old woman, who had a sacral neuromodulation implant placed four years ago, has declining efficacy despite several reprogramming sessions. A plain film X-ray is shown. The next step is:

A. revise lead, place electrodes deeper.
B. revise lead, place lead more laterally in S3.
C. revise lead, place lead in S4.
D. revise lead, place lead with curved stylet.
E. remove IPG and lead, initiate 200 units onabotulinumtoxinA injections.

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7. A five-day-old boy has vomiting and dehydration. His serum CO_2 is 12 mEq/L, K^+ 5.5 mEq/L, and creatinine 2.2 mg/dL. A VCUG demonstrates PUV and bilateral grade 4 VUR. The next step is:

A. percutaneous cystostomy.
B. percutaneous nephrostomies.
C. valve ablation.
D. urethral catheter drainage.
E. cutaneous vesicostomy.

8. A 40-year-old man suffers a gunshot to the abdomen with left ureteral transection at the L3 vertebral level, and a ureteroureterostomy is performed. Post-operatively, he is not able to flex his thigh. These deficits are due to injury to the:

A. femoral nerve.
B. ilioinguinal nerve.
C. genitofemoral nerve.
D. lateral femoral cutaneous nerve.
E. obturator nerve.

9. A two-month-old, uncircumcised boy with a sacral dimple undergoes evaluation of a febrile UTI. Ultrasound shows bilateral hydroureteronephrosis and a conus medullaris at the mid-aspect of L4. VCUG shows bilateral grade 4 reflux and a normal urethra. The next step is:

A. CMG.
B. cystoscopy.
C. MAG-3 renal scan.
D. circumcision.
E. vesicostomy.

10. A 42-year-old man with azoospermia and primary infertility has a FSH of 15 mIU/L, small volume testes, and an otherwise normal physical examination. The factor that most reliability predicts his ability to have a biologic child is:

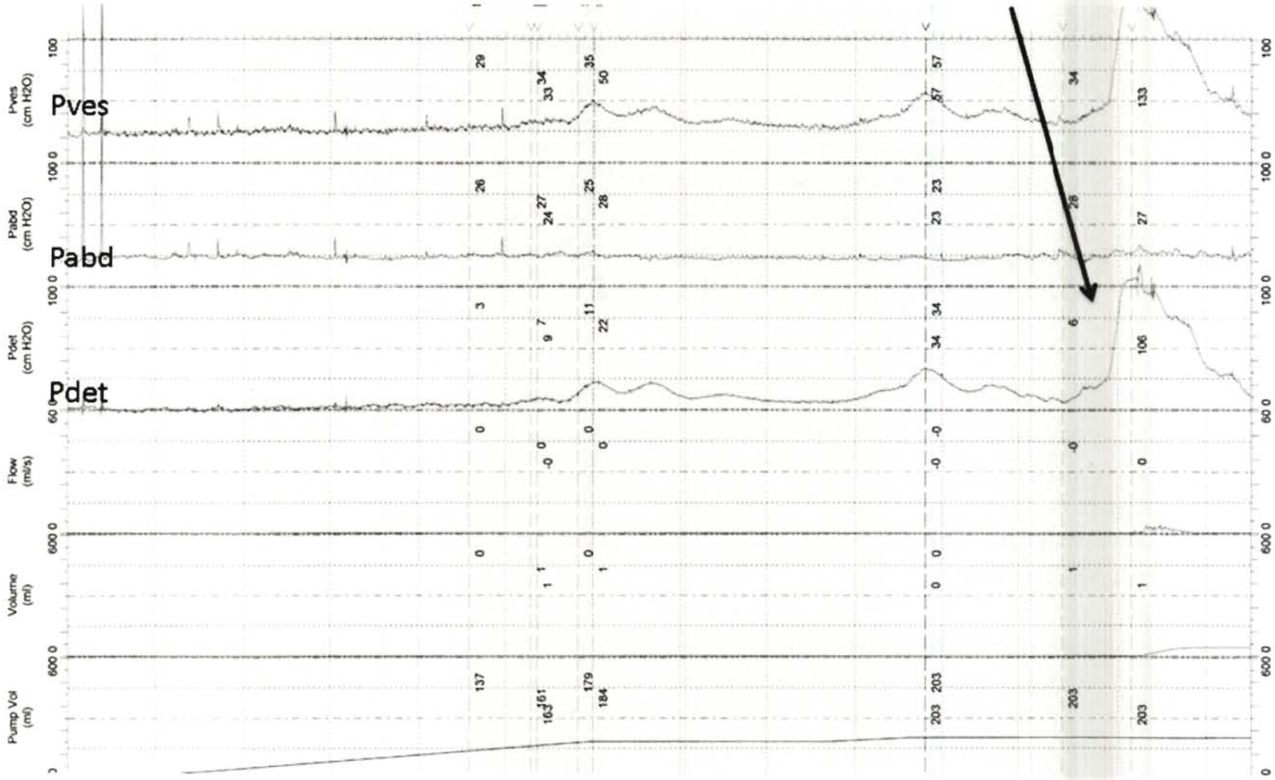
A. vasography.
B. serum FSH.
C. wife's fertility.
D. testicular volume.
E. testicular biopsy.

11. A 34-year-old woman is hypertensive. Laboratory studies reveal a serum sodium of 149 mEq/L, potassium 2.9 mEq/L, and CO_2 28 mEq/L. Plasma renin activity is suppressed. A CT scan reveals an enlarged left adrenal gland but no distinct mass. The next step is:

A. spironolactone.
B. nifedipine.
C. MRI scan of adrenal.
D. serum aldosterone:renin ratio.
E. adrenal vein aldosterone sampling.

12. A 67-year-old man has bothersome LUTS six months after hip surgery despite tamsulosin treatment. His urinalysis shows 0-2 RBC/hpf, and his PVR is 90 mL. DRE demonstrates 35 gm prostate. He undergoes urodynamics as shown. The next step is:

A. creatinine.
B. antimuscarinics.
C. cystoscopy.
D. prostatic onabotulinumtoxinA.
E. TURP.


Permission to void

13. A 49-year-old man had a lesion of the glans penis and undergoes excisional biopsy. Pathology reveals squamous cell CIS with a positive margin. Physical examination reveals a well-healed scar and no inguinal adenopathy. The next step is:

A. podophyllin.
B. brachytherapy.
C. excision of previous scar.
D. partial penectomy.
E. total penectomy.

14. A ten-day-old infant boy is hospitalized for failure to thrive. After his umbilical stump fell off, fluid has intermittently drained from the umbilicus. The umbilical fluid has a creatinine of 10 mg/dL and grows > 10^5 CFU/mL of E. coli. The next step should be antibiotics and:

A. observation.
B. urethral catheter drainage.
C. VCUG.
D. cauterization of tract.
E. closure of fistula.

15. A 76-year-old man with diabetes has hematuria. CT urogram shows a 5 mm filling defect in the distal right ureter. Ureteroscopic biopsy reveals a low grade urothelial carcinoma. The next step is:

A. nephroureterectomy.
B. ureteral stent and intravesical BCG.
C. segmental resection and ureteroureterostomy.
D. ureteroscopic tumor ablation.
E. distal ureterectomy and reimplantation.

16. A 72-year-old woman undergoes an abdominal hysterectomy. In the recovery room, she is anuric for four hours despite several boluses of I.V. fluids. Her indwelling catheter is patent, blood pressure is 100/50 mmHg, and pulse is 100 BPM. Her estimated blood loss during the procedure was 1000 mL. The best explanation for her condition is:

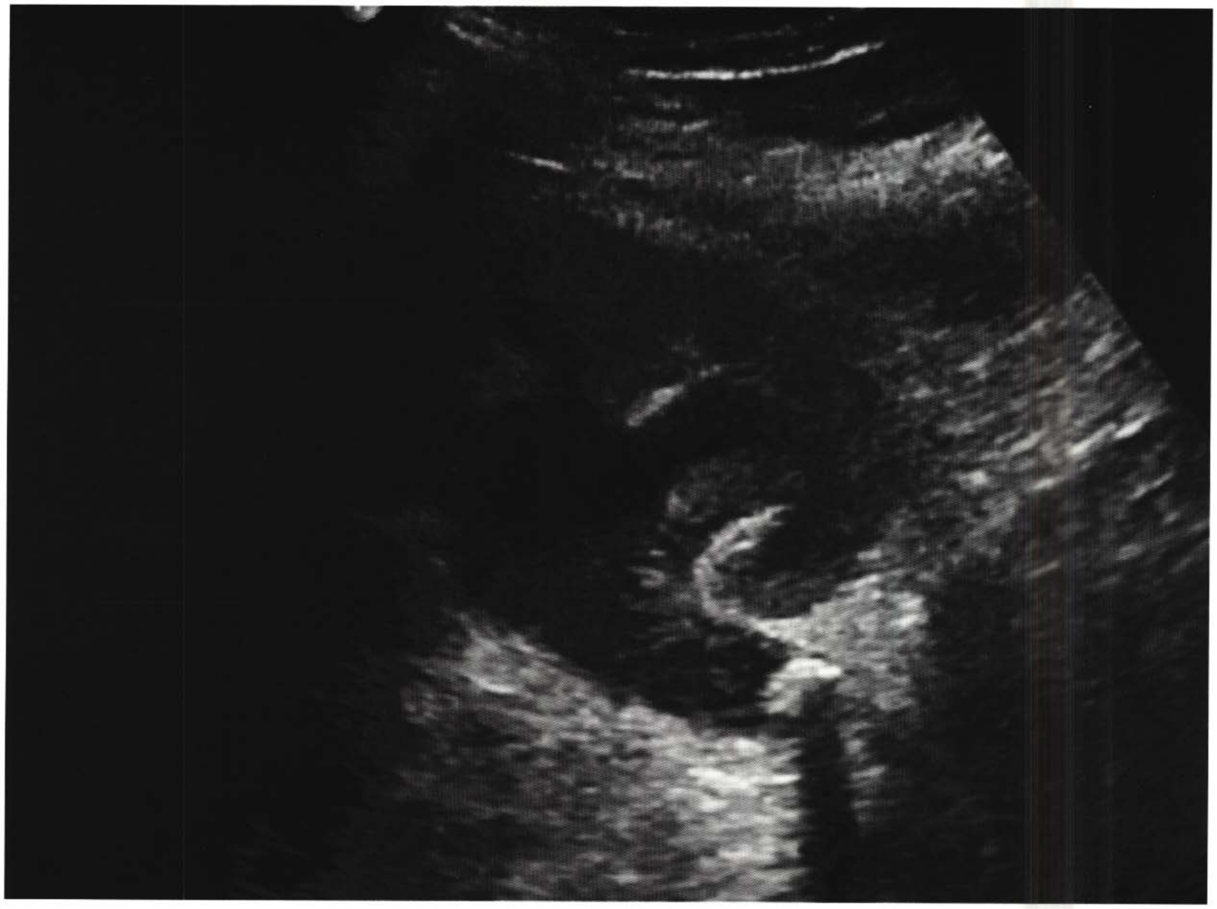
A. acute tubular necrosis.
B. bilateral ureteral obstruction.
C. prerenal azotemia.
D. hypovolemic shock.
E. bladder perforation.

17. The boundaries of a standard inguinal lymph node dissection for the treatment of penile cancer should include:

A. inguinal ligament, sartorius, adductor longus.
B. inguinal ligament, sartorius, fascia lata.
C. inguinal ligament, gracilis, adductor longus.
D. Cooper's ligament, sartorius, adductor longus.
E. Cooper's ligament, gracilis, adductor brevis.

18. A 17-year-old boy with spina bifida has a two-week history of fever and vague abdominal pain. He has a prior bladder augmentation, appendicovesicostomy, bladder neck sling, and bilateral cross-trigonal ureteral reimplantation. Renal ultrasound is shown. The next step is antibiotics and:

A. observation.
B. tamsulosin.
C. cystoscopy and ureteral stent.
D. percutaneous nephrostomy tube.
E. CT cystogram.



19. 5-alpha-reductase deficiency is associated with:

A. poorly differentiated Wolffian structures.
B. presence of developed Müllerian structures.
C. gynecomastia.
D. elevated concentration of testosterone at puberty.
E. elevated dihydrotestosterone:testosterone ratio.

20. A 32-year-old woman with a solitary kidney underwent urinary diversion with an ileal conduit as a child. She has stable, moderate hydronephrosis, but her serum creatinine has risen to 2.8 mg/dL. A loopogram shows no reflux and no residual urine. A diuretic renogram reveals delay in uptake of the radiopharmaceutical and poor response to diuretic with a T1/2 of 22 minutes. The next step is:

A. hydrate and repeat the renogram.
B. contrast CT scan.
C. percutaneous nephrostomy tube.
D. renal biopsy.
E. revision of the ileal conduit.

21. A 60-year-old man has a high grade, T1 urothelial carcinoma of the bladder. He receives the fifth of six weekly instillations of intravesical BCG. Twelve hours later, he has a temperature of 39.5° C, difficulty breathing, and hypotension. The most likely cause of this complication is:

A. reflux of BCG into the upper tracts.
B. acute UTI.
C. traumatic catheterization.
D. more virulent strain of BCG.
E. impaired immunological state.

22. A 45-year-old man with a history of hypertension and significant tobacco use has erectile dysfunction one year following a crush injury to the pelvis. An arteriogram at the time of his injury revealed unilateral focal occlusion of the internal pudendal artery. Treatment should be:

A. intracavernous vasoactive injections.
B. dorsal venous ligation.
C. percutaneous angioplasty.
D. arterial revascularization.
E. penile prosthesis.

23. A 39-year-old man with a large, left varicocele requests vasectomy reversal four years after vasectomy. At scrotal exploration, he has rare non-motile sperm in the right vas deferens and an absence of sperm in clear fluid from the left vas deferens. The next step is:

A. bilateral vasovasostomy.
B. left varicocelectomy and bilateral vasovasostomy.
C. right vasovasostomy and left vasoepididymostomy.
D. left testis biopsy and intra-operative wet prep evaluation.
E. testicular sperm extraction.

24. A 21-year-old man develops a large dorsal hematoma after a seemingly superficial stiletto knife wound to his penis at the dorsal penoscrotal junction. He is able to void normally after the injury and has no urethral bleeding or gross hematuria. The next step is:

A. pelvic MRI scan.
B. retrograde urethrography.
C. urethroscopy.
D. antibiotics and wound closure.
E. exploration.

25. The initial response of the renal vasculature to complete ureteral obstruction is:

A. preglomerular vasodilatation.
B. postglomerular vasodilatation.
C. afferent arteriolar constriction.
D. efferent arteriolar constriction.
E. renal artery vasoconstriction.

26. A 54-year-old woman undergoes a continent cutaneous urinary diversion two years after pelvic radiation for cervical cancer. Four months later, she has right lower quadrant pain and fecaluria. A pouchogram reveals contrast extending into the colon adjacent to the pouch. The next step is:

A. hyperalimentation.
B. bilateral nephrostomy drainage.
C. pouch endoscopy and fulguration of fistula.
D. catheter drainage and low residue diet.
E. colonoscopy.

27. A 55-year-old man with bladder cancer undergoes a radical cystectomy. He is averse to an incontinent diversion. Intra-operative frozen-section reveals negative lymph nodes but invasive urothelial carcinoma at the prostatic apical margin. The next step is:

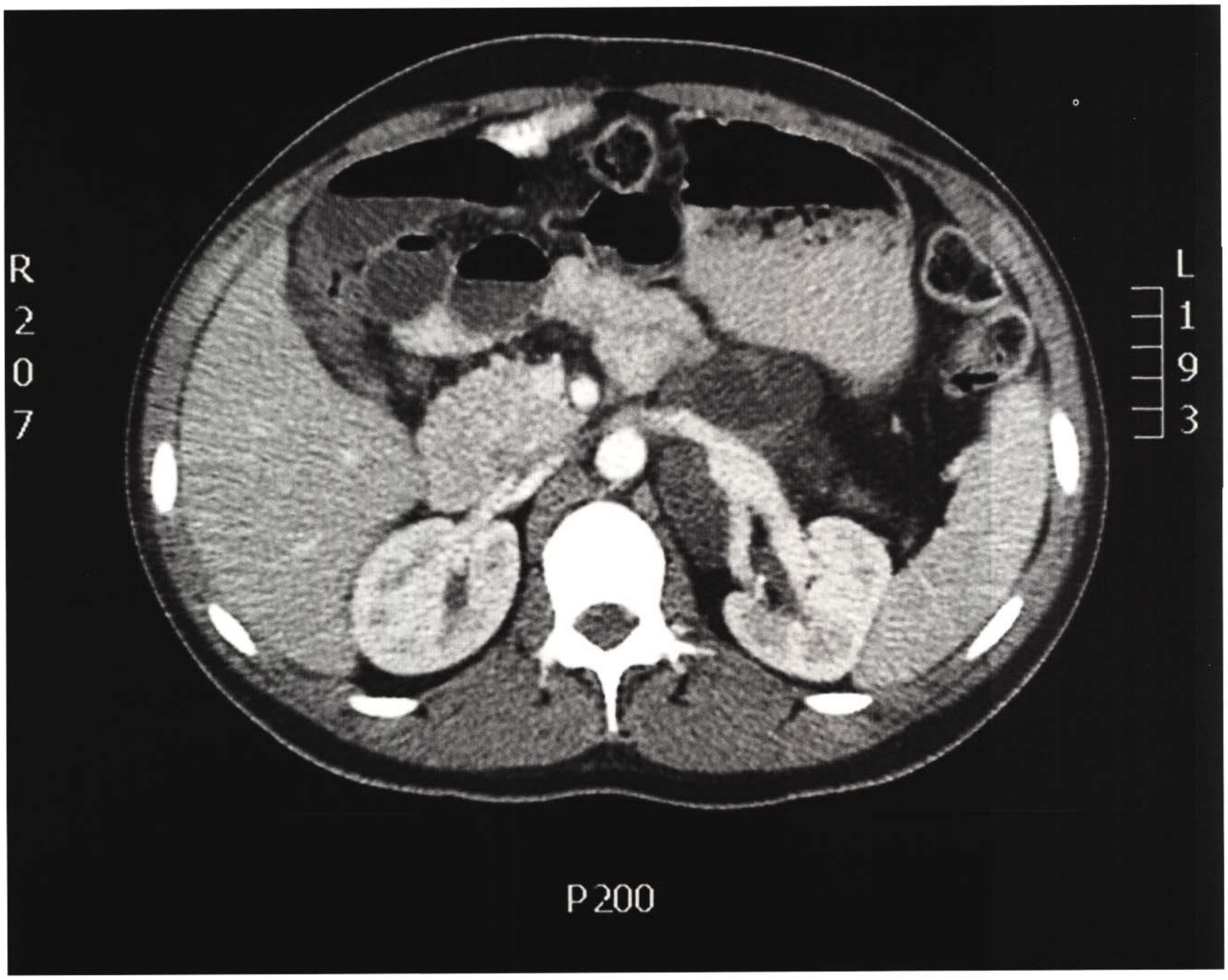
A. ileal neobladder.
B. ileal neobladder and adjuvant pelvic radiotherapy.
C. ileal neobladder and adjuvant chemotherapy.
D. ileal conduit.
E. continent cutaneous urinary diversion.

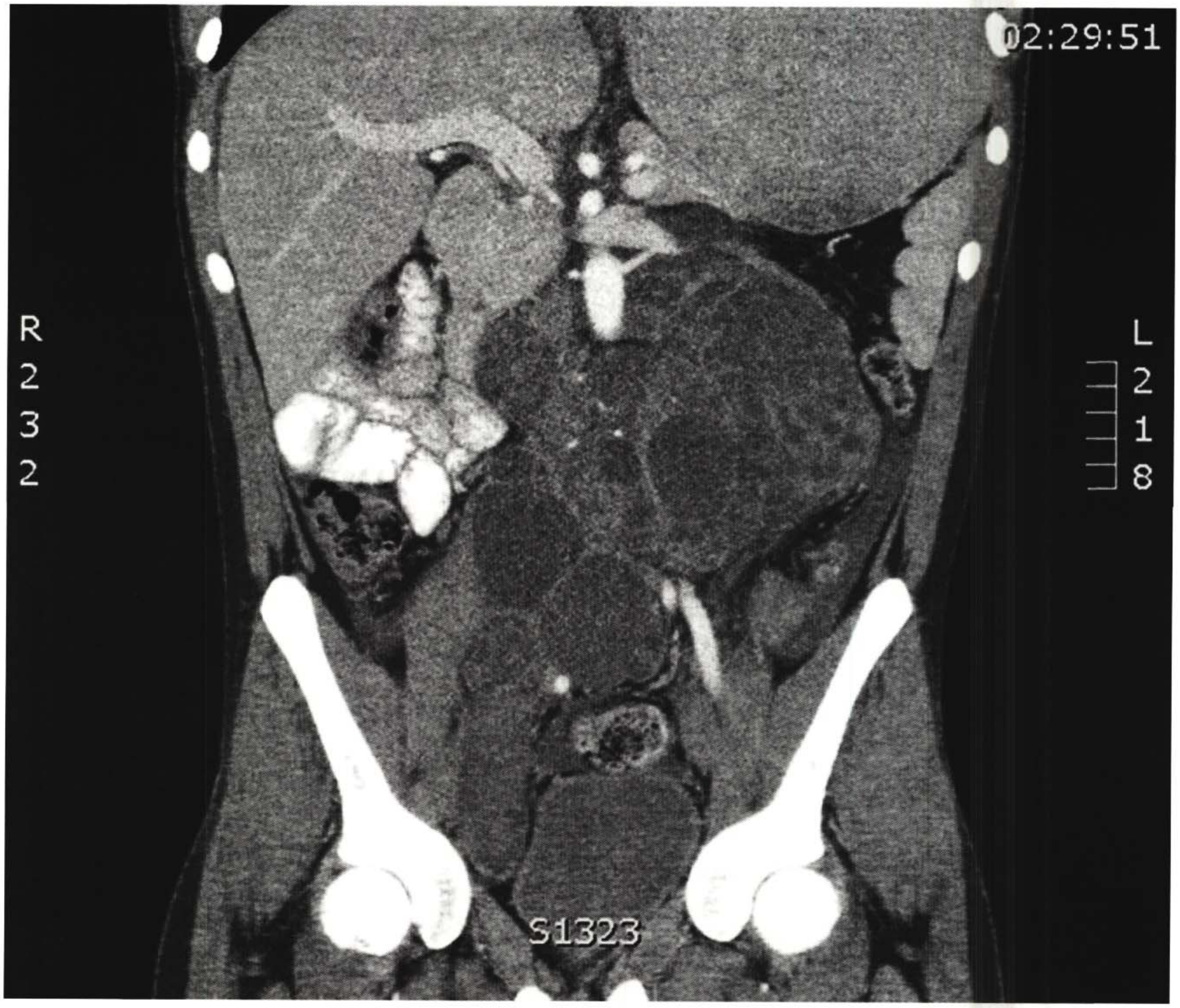
28. The vertebral level at which the conus medullaris in the neonate terminates is:

A. L1.
B. L3.
C. L5.
D. S1.
E. S3.

29. A 25-year-old man with negative tumor markers underwent a left radical orchiectomy with pathology showing mature and immature teratoma. Chest CT scan is negative. CT scan images of the abdomen and pelvis are shown. The next step is:

A. PET CT scan.
B. percutaneous biopsy of the retroperitoneal mass.
C. three cycles of EP.
D. three cycles of BEP.
E. RPLND.

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30. A 25-year-old man sustains perineal trauma and a pelvic fracture. A retrograde urethrogram shows contrast in the upper thigh. The initial tissue plane the contrast passed through to reach the thigh is:

A. Buck's fascia.
B. Colles' fascia.
C. fascia lata.
D. external spermatic fascia.
E. dartos fascia.

31. The prevalence of catheter-associated UTIs can be reduced by:

A. prophylactic oral antibiotics.
B. routine meatal cleansing.
C. antibiotic irrigation of the bladder.
D. maintenance of a closed drainage system.
E. hydrogen peroxide instillation into the drainage bag.

32. Transection of the dorsal nerve roots at S2-S4 results in:

A. urinary incontinence.
B. detrusor sphincter dyssynergia.
C. loss of psychogenic erections.
D. anejaculation.
E. decreased penile sensation.

33. A 24-year-old man has recurrent cystine nephrolithiasis. Urine volume is more than 3.0 L/day. He is taking alpha-mercaptoproprionylglycine (Thiola®) and potassium citrate tablets three times per day with no side effects. He notes that his stools are filled with tablet-like material. The best recommendation is:

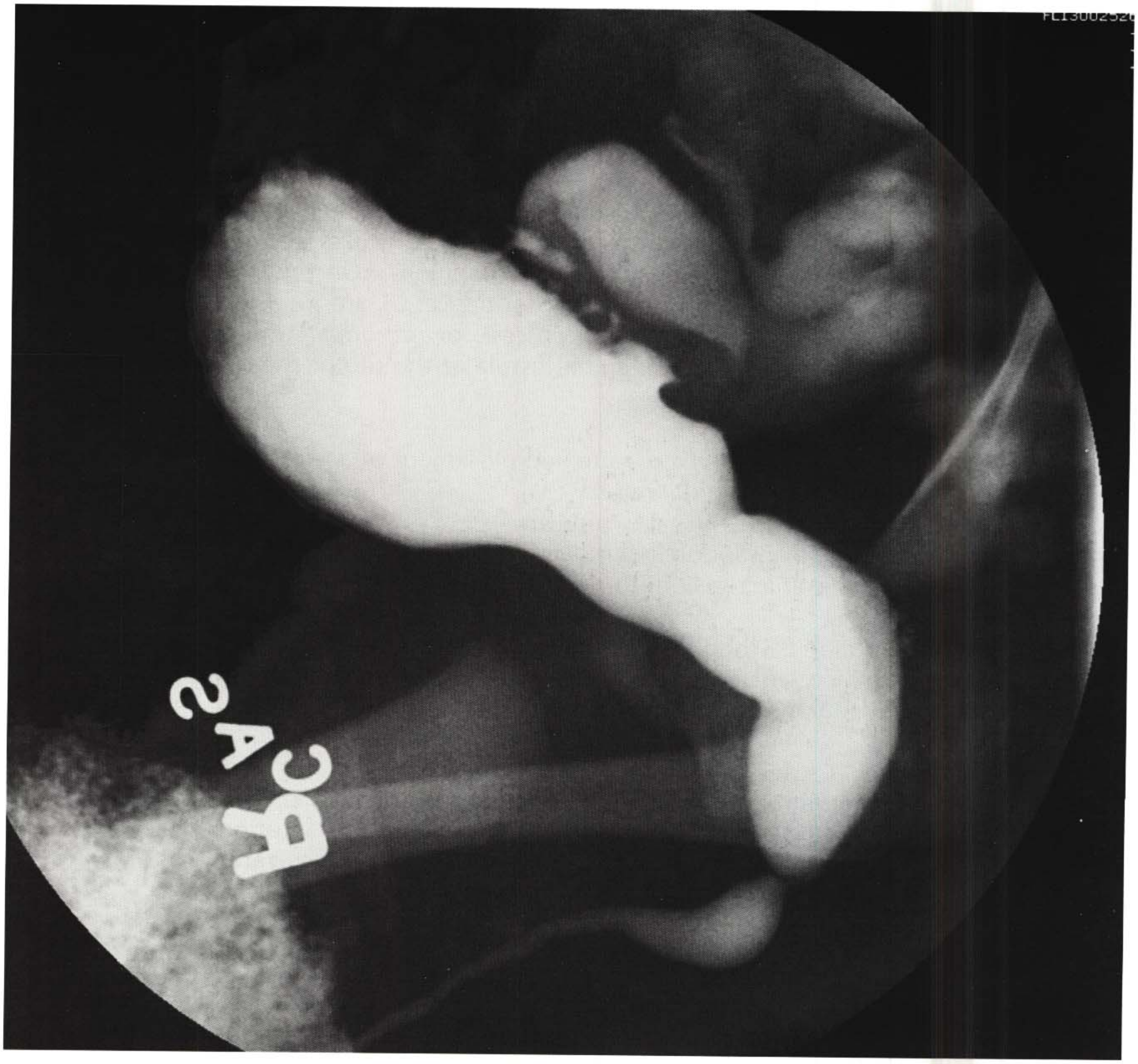
A. reassurance.
B. take the tablets before meals.
C. evaluate for malabsorption.
D. change Thiola® to D-penicillamine.
E. change potassium citrate formulation.

34. A 35-year-old man with Hodgkin's disease has not voided for 18 hours. He is being treated with abdominal XRT and chemotherapy. The most likely cause of anuria is:

A. bilateral ureteral obstruction from retroperitoneal lymphoma.
B. radiation enteritis with dehydration.
C. acute tubular necrosis.
D. renal tubular obstruction with uric acid crystals.
E. acute radiation nephritis.

35. A one-day-old boy has a history of severe prenatal bilateral hydroureteronephrosis and oligohydramnios diagnosed at 19 weeks of gestation. Postnatal ultrasound confirms bilateral hydroureteronephrosis and his VCUG is shown. The most common cause of neonatal mortality is:

A. urosepsis.
B. acute renal failure.
C. pulmonary hypoplasia.
D. urinary ascites.
E. congenital cardiac disease.



36. The VHL tumor suppressor gene regulates the expression of:

- A. basic fibroblastic growth factor.
- B. epidermal growth factor receptor.
- C. c-Met proto-oncogene.
- D. VEGF.
- E. transforming growth factor beta.

37. A 65-year-old man with rectal carcinoma treated by abdominal perineal resection develops urinary incontinence two years later. His urinalysis is normal and PVR is 300 mL. Renal ultrasound demonstrates moderate bilateral hydronephrosis. The most likely urodynamic findings are:

- A. detrusor overactivity with bladder outlet obstruction.
- B. detrusor overactivity with detrusor external sphincter dyssynergia.
- C. detrusor areflexia with normal compliance.
- D. detrusor areflexia with reduced compliance.
- E. impaired bladder contractility with intrinsic sphincter deficiency.

38. A 54-year-old woman, with a history of cervical cancer treated with radiation therapy five years ago, undergoes a TUR of a 2 cm mass above the left ureteral orifice. Final pathology reveals an inverted papilloma. On the third post-operative day, she develops continuous urinary incontinence. CT urogram reveals no evidence of upper tract pathology, perivesical abscess, or urinoma. Subsequent cystoscopic evaluation reveals a 2 cm vesicovaginal fistula at the site of the resection. The next step is:

- A. cauterization of the fistula site and placement of a urethral catheter.
- B. immediate transvaginal repair.
- C. transvaginal repair in three months.
- D. immediate transabdominal repair.
- E. transabdominal repair in three months.

39. A 50-year-old man is scheduled for a living-related renal transplant. He has a serum creatinine of 5.5 mg/dL and is not yet on dialysis. His non-contrast CT scan shows a 2 cm solid left renal mass. The next step is:

- A. repeat CT scan with I.V. contrast.
- B. radical nephrectomy and exclude patient from transplantation.
- C. simultaneous radical nephrectomy and renal transplantation.
- D. radical nephrectomy, transplant in two years if no recurrence.
- E. partial nephrectomy, transplant in two years if no recurrence.

40. Cranberry juice may help prevent UTI by reducing:

- A. urine pH.
- B. urine osmolality.
- C. secretory IgA.
- D. bacterial adhesion.
- E. interleukin 6 (IL-6).

41. A neonate with a 3 cm phallus and non-palpable gonads can be confirmed to have at least one testicle by:

A. 46 XY karyotype.
B. elevated 17-hydroxyprogesterone.
C. normal LH, FSH levels.
D. normal Müllerian inhibiting substance concentration.
E. increased urinary ketosteroids.

42. A 78-year-old man had a radical cystectomy and ileal conduit for recurrent bladder cancer. Pathology showed stage pT3bN0M0 cancer. CT scan at one year was normal, but at two years, there was marked right hydroureteronephrosis with very thin residual renal parenchyma. Loopogram shows a tight narrowing of the right distal ureter 2 cm above the ureteroileal junction. He is asymptomatic and serum creatinine is 1.6 mg/dL. The next step is:

A. observation.
B. retrograde balloon dilation of the ureter.
C. percutaneous laser incision of the stricture.
D. open reimplantation of the ureter into the ileum.
E. right nephroureterectomy.

43. In the process of spermatogenesis, the final product of meiosis is the:

A. spermatogonia.
B. primary spermatocyte.
C. secondary spermatocyte.
D. spermatid.
E. spermatozoa.

44. Complications associated with inguinal lymph node dissection for penile cancer are documented to occur most frequently in which of the following settings:

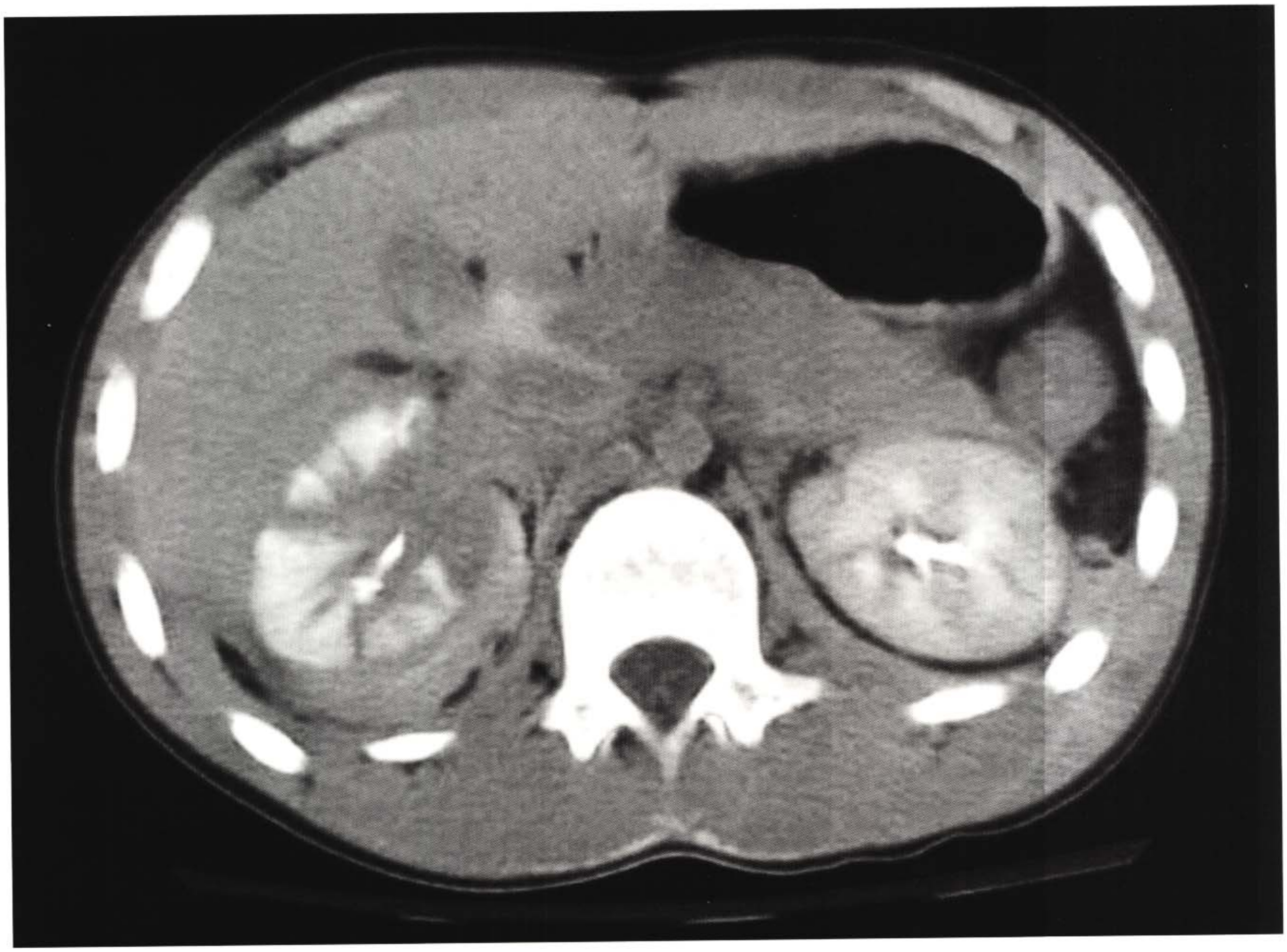
A. palliative indication.
B. prior chemotherapy.
C. insulin-dependent diabetes.
D. congestive heart failure.
E. obesity.

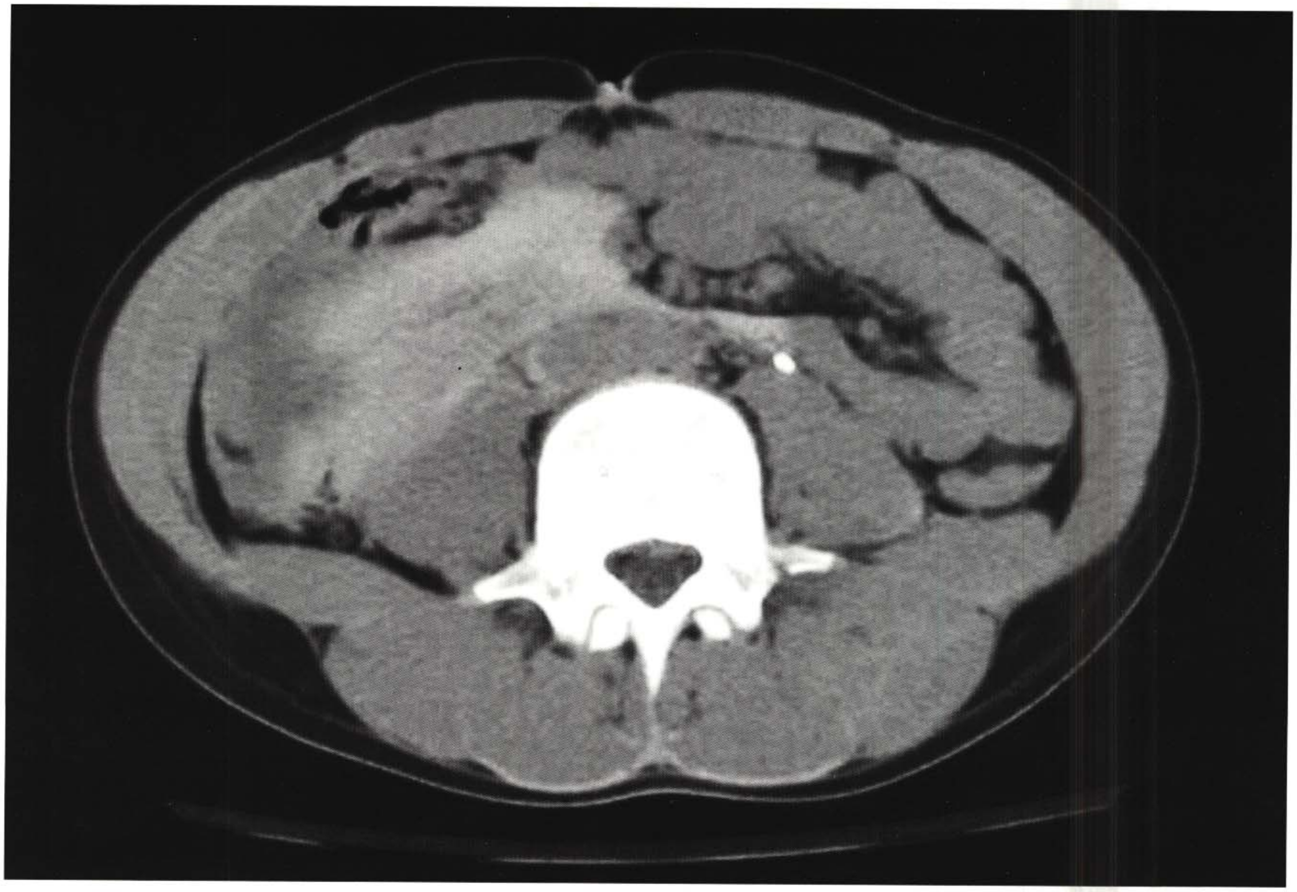
45. An 80-year-old man has urinary retention. He has bilateral pitting edema, an elevated jugular venous pulse, and a blood pressure of 200/120 mmHg. His creatinine is 4.0 mg/dL. The serum K^+ and Na^+ are normal. An ultrasound shows a very distended bladder and bilateral pelvicaliectasis. Three liters of urine is obtained from his bladder when he is catheterized. Urine output over the next two hours is 700 mL. The next step is:

A. serial creatinine measurement.
B. replace output mL per mL with D5 1/2 NS.
C. monitor fluid intake and output every four hours.
D. monitor postural blood pressure for two hours.
E. spot check urine for osmolality, sodium, and potassium.

46. A 15-year-old boy is involved in a high-speed MVC. His vital signs are stable. Urinalysis reveals 25-50 RBC/hpf. An abdominal CT scan with I.V. contrast is shown. The next step is:

A. observation.
B. delayed CT imaging.
C. arteriography.
D. retrograde pyelogram.
E. immediate renal exploration.





47. Stent placement after uncomplicated ureteroscopic stone extraction for a 5 mm distal ureteral calculus:

A. is indicated if intracorporeal lithotripsy is performed.
B. improves stone-free rate.
C. increases post-procedure pain.
D. is indicated if balloon dilation was performed.
E. reduces the likelihood of ureteral strictures.

48. A 27-year-old woman is prescribed a ten day course of an oral quinolone for a pan-sensitive E. coli UTI. Four days later, she develops a low-grade fever to 38° C and a skin rash. Urinalysis shows 1+ protein with WBC casts, occasional eosinophils, and 5-10 RBC/hpf. Urine gram stain is negative for bacteria. Serum creatinine is 1.8 mg/dL. The next step is discontinuation of quinolone antibiotics and:

A. observation.
B. change to ampicillin.
C. change to cephalosporin.
D. oral antihistamines.
E. prednisone.

49. A 28-year-old, paraplegic man had a sphincterotomy seven years ago and wears a condom catheter. During an evaluation for renal insufficiency, renal ultrasound reveals bilateral hydroureteronephrosis. The parameter or study most predictive of this complication is:

A. EMG.
B. CMG.
C. Valsalva LPP.
D. detrusor LPP.
E. urethral pressure profilometry.

50. Stage 3 prolapse in the Pelvic Organ Prolapse Quantification (POPQ) system occurs when the most distal portion of the prolapse is:

A. 1 cm or less proximal or distal to the hymenal plane.
B. 1 cm or less proximal or distal to the introitus.
C. > 1 cm distal to the hymen; entire vagina has not prolapsed.
D. > 1 cm distal to the introitus; entire vagina has not prolapsed.
E. associated with complete vaginal eversion.

51. A 64-year-old man undergoes a six core biopsy for a PSA of 5.6 ng/mL. Pathology is a Gleason 6 (3+3) prostate cancer in a single core involving less than 10% of the tissue. The other cores are normal. He prefers active surveillance. The next step is:

A. CT scan.
B. initiate finasteride.
C. repeat prostate biopsy with 12 or more cores.
D. check PSA quarterly and repeat biopsy in one year.
E. counsel patient that he is not appropriate for active surveillance.

52. Randall's plaques are composed of:

A. calcium oxalate.
B. calcium apatite.
C. brushite.
D. hydroxyproline.
E. cholesterol.

53. The C-arm fluoroscopic operational factor resulting in an increased radiation dose to both the patient and operating room personnel is:

A. increasing tube kilovoltage (kVp).
B. increasing tube current (mA).
C. decreasing image intensifier to skin distance.
D. removing the image intensifier grid.
E. increasing the X-ray tube (source) to skin distance.

54. Parathyroid hormone level is suppressed in a patient with:

A. obesity.
B. a recent renal transplant.
C. renal calcium leak.
D. absorptive hypercalciuria.
E. renal insufficiency.

55. Following TURBT for papillary urothelial carcinoma of the bladder, peri-operative instillation of mitomycin C:

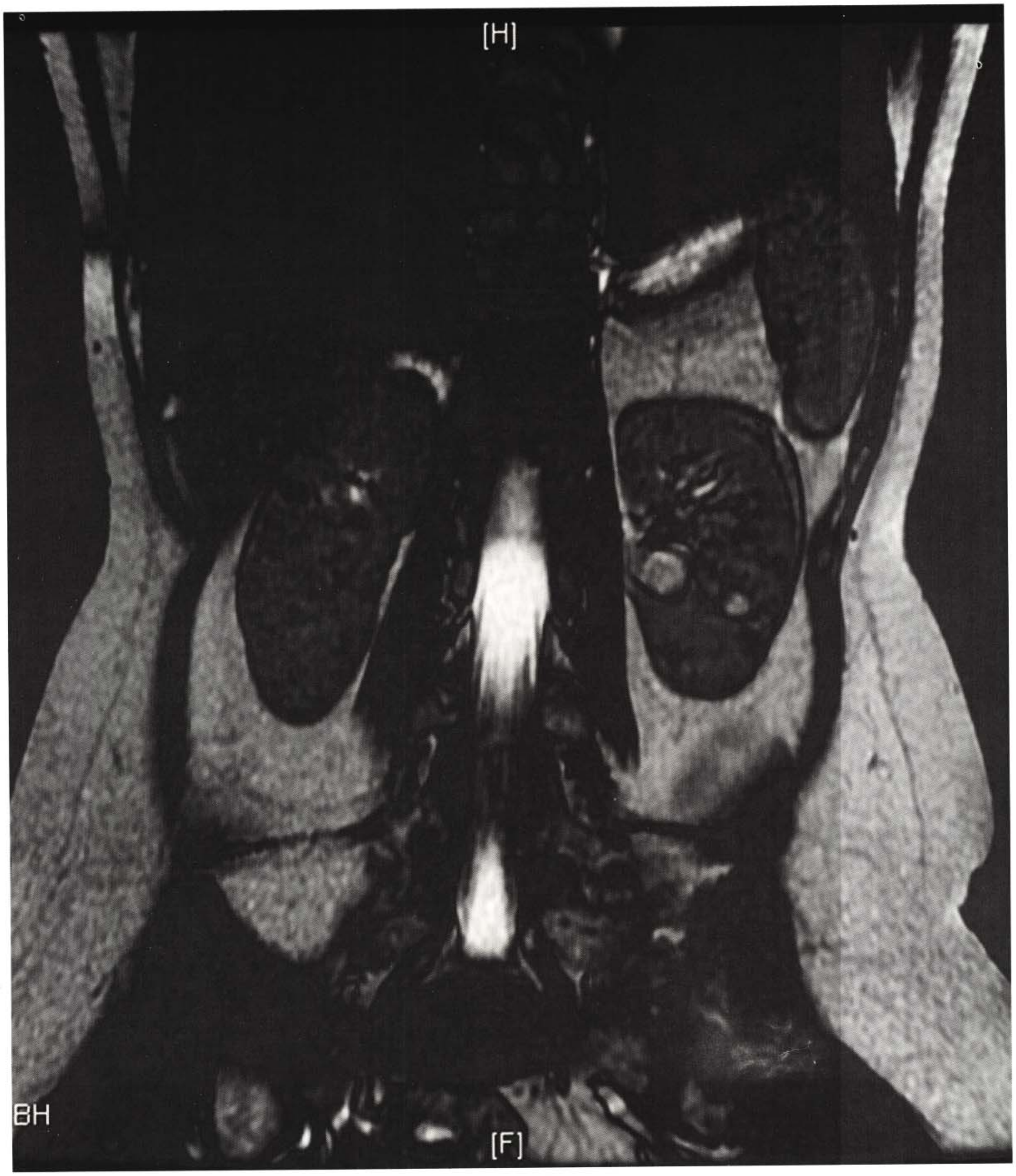
A. is unnecessary for small, solitary, low grade tumors.
B. is most effective in acidic urine.
C. should be given within 24 hours of the resection.
D. should be followed by an induction course of intravesical therapy.
E. should be delayed for 24 hours if an extraperitoneal perforation occurs.

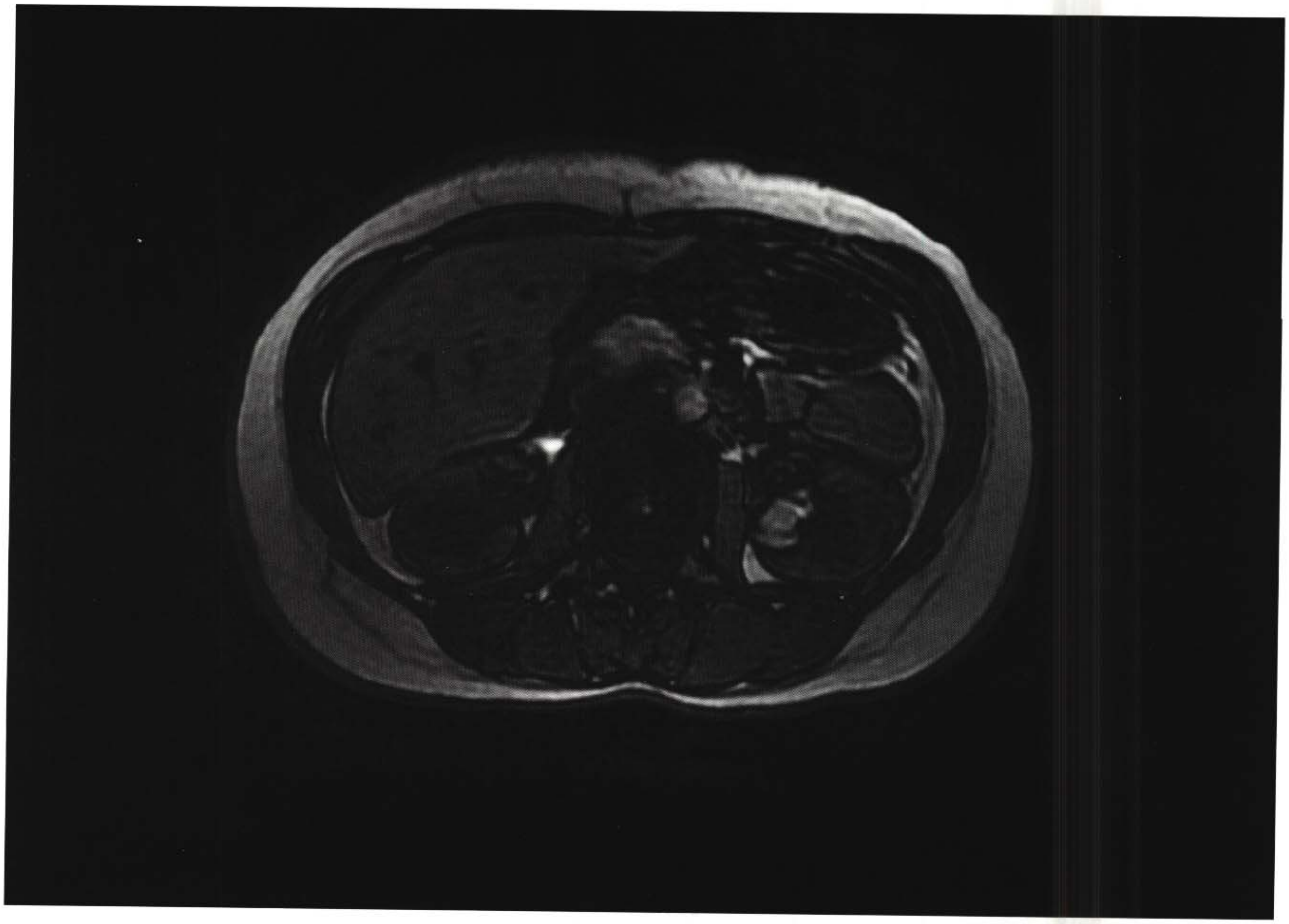
56. The signal intensity of prostate cancer on T1 and T2 weighted MRI scan images is:

A. high T1 and high T2.
B. low T1 and high T2.
C. high T1 and low T2.
D. low T1 and low T2.
E. intermediate T1 and high T2.

57. A 21-year-old woman undergoes resection of a cystic lung mass. The pathology reveals lymphangioleiomyomatosis (LAM). Abdominal T1 MRI scan is shown. The most likely diagnosis is:

A. VHL.
B. Birt-Hogg-Dubé.
C. tuberous sclerosis.
D. hereditary papillary RCC.
E. familial leiomyomatosis RCC.





58. A 23-year-old woman with cystic fibrosis takes nutritional supplements, Vitamin C, and antibiotic prophylaxis to prevent respiratory infections. She has hyperoxaluria and recurrent calcium oxalate stones. The most likely cause of her stones is:

A. Vitamin C therapy.
B. reduction of intestinal Oxalobacter formigenes.
C. high calcium diet.
D. cystic fibrosis-associated ileal absorption disorder.
E. dietary glycine excess.

59. A 45-year-old man with metastatic RCC involving the lung, liver, lymph nodes, and bone undergoes a right radical nephrectomy. His pre-operative labs include a hemoglobin of 9 gm/dL and a calcium of 11.5 mg/dL. The treatment most likely to prolong overall survival is:

A. temsirolimus.
B. interferon alpha.
C. bevacizumab.
D. sorafenib.
E. sunitinib.

60. A one-year-old, uncircumcised boy with spina bifida is managed with CIC and oxybutynin. Ultrasound and VCUG are normal. He has recurrent asymptomatic episodes of cloudy urine. A recent urinalysis shows 10-20 WBC/hpf and a urine culture grows 10^5 E. coli. The next step is:

A. observation.
B. treat with culture specific antibiotics and start prophylaxis.
C. gentamicin bladder irrigations.
D. circumcision.
E. vesicostomy.

61. A 40-year-old woman has chronic renal insufficiency and a creatinine of 2.5 mg/dL. The medication that will increase the serum creatinine but not alter the true GFR is:

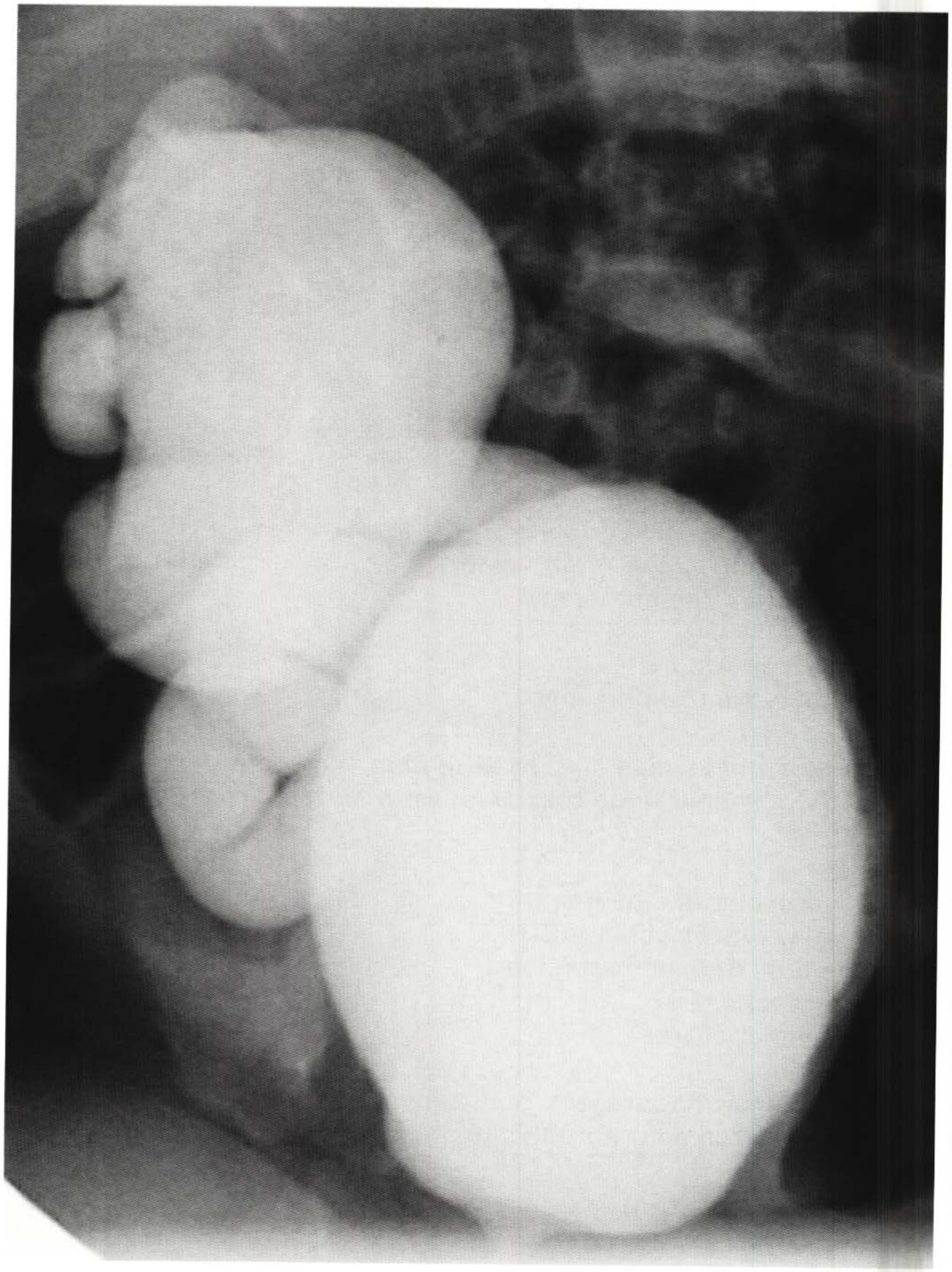
A. captopril.
B. cephalexin.
C. trimethoprim.
D. spironolactone.
E. cisplatin.

62. The most important clinical or pathologic parameter associated with progression of non-muscle-invasive bladder cancer is:

A. tumor stage.
B. early recurrence.
C. location.
D. presence of mutant p53.
E. age.

63. A three-year-old girl has recurrent febrile UTIs in spite of prophylactic antibiotics. Her VCUG is shown. The next step is:

A. creatinine clearance.
B. DMSA scan.
C. MR urogram.
D. urodynamics.
E. ureteral reimplantation.



64. A 78-year-old man with dilated cardiomyopathy and obstructive pulmonary disease underwent percutaneous radiofrequency ablation of an enlarging 2.7 cm renal mass. Six months later, MRI scan demonstrates persistent contrast-enhancement within the periphery of the tumor. The next step is:

A. MRI scan in six months.
B. renal mass biopsy.
C. PET scan.
D. repeat percutaneous ablation.
E. partial nephrectomy.

65. A 52-year-old woman develops continuous leakage of clear fluid from her vagina six weeks following a laparoscopic transabdominal hysterectomy for benign disease. A CT urogram is unremarkable and cystoscopy reveals a subtrigonal 1 cm vesicovaginal fistula between the posterior wall of the bladder and the mid-vagina. The next step is:

A. placement of urethral catheter and repeat evaluation in six weeks.
B. cystoscopy and fulguration of the fistula.
C. immediate transvaginal repair.
D. immediate transabdominal repair.
E. transabdominal repair in three months.

66. A 62-year-old man undergoes a TURBT for a lesion at the bladder dome. Final pathology reveals muscle-invasive small cell carcinoma. Metastatic work-up is negative. The next step is:

A. repeat TURBT.
B. neoadjuvant chemotherapy.
C. XRT.
D. partial cystectomy.
E. radical cystoprostatectomy.

67. A 45-year-old, obese man has hypertension, new onset diabetes, and general weakness. Two 24-hour urine collections show elevated cortisol levels. The next step is:

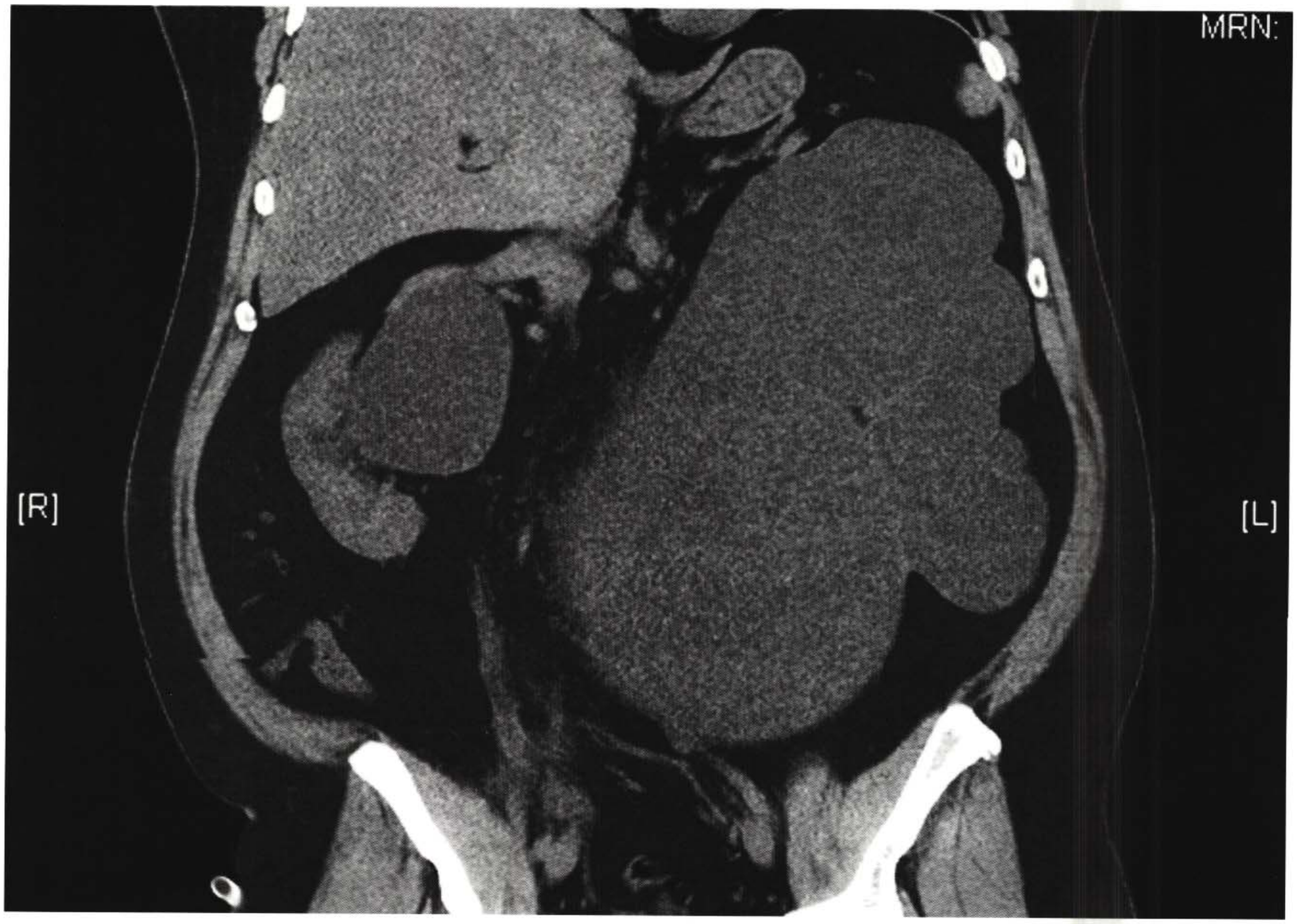
A. low-dose dexamethasone test.
B. plasma corticotrophin (ACTH).
C. high-dose dexamethasone test.
D. metyrapone test.
E. abdominal CT scan.

68. A 24-year-old man has stage 1 pure seminoma without vascular invasion. He is reluctant to undergo adjuvant XRT. An alternative to observation is one cycle of:

A. paclitaxel.
B. etoposide.
C. bleomycin.
D. carboplatin.
E. ifosfamide.

69. An asymptomatic, 75-year-old man with multiple medical co-morbidities has the incidental finding on CT scan as shown. Serum creatinine is 1.0 mg/dL. The appropriate management of the left kidney is:

A. observation.
B. ureteral stent placement with interval changes.
C. percutaneous nephrostomy with interval changes.
D. laparoscopic pyeloplasty.
E. nephrectomy.



70. A nine-year-old girl with spina bifida has urinary incontinence. Urodynamics shows normal capacity with good compliance and a low Valsalva LPP. She has a fascial sling and is initially dry. Four months later, she has recurrent incontinence. Ultrasound is normal. Videourodynamics demonstrate a bladder capacity of 250 mL, a pressure-specific bladder capacity of 150 mL at 30 cm H_2O, a detrusor LPP of 60 cm of H_2O, and bilateral grade 1 reflux. The next step is:

A. prophylactic antibiotics.
B. oral antimuscarinic.
C. endoscopic injection of bladder neck.
D. bladder augmentation.
E. bilateral ureteral reimplantation.

71. A 53-year-old man with a PSA of 2.7 ng/mL undergoes 12-core TRUS prostate needle biopsy. Pathology reveals focal high-grade PIN and atypical adenomatous hyperplasia (adenosis). The next step is:

A. examine multiple deeper tissue sections of current biopsy.
B. immediate repeat 12-core TRUS biopsy.
C. immediate saturation biopsy.
D. repeat PSA in six months.
E. TRUS biopsy in six months.

72. A morbidly obese, 55-year-old woman undergoes Roux-En-Y bypass. In order to minimize stone risk, the best treatment is:

A. aggressive hydration.
B. calcium carbonate.
C. hydrochlorothiazide.
D. potassium citrate.
E. allopurinol.

73. A 61-year-old man with Parkinson's disease has urinary frequency, urgency, urinary incontinence, and weak stream. Pressure-flow urodynamics reveal detrusor overactivity, a sustained voiding detrusor pressure of 88 cm H_2O, and a maximum flow of 7 mL/sec. Cystometric bladder capacity is 275 mL. PVR is 150 mL. The next step is:

A. antimuscarinic.
B. baclofen.
C. alpha-blocker.
D. CIC.
E. laser vaporization of prostate.

74. A 52-year-old woman is G4P4 and reports urinary incontinence with physical activities. On physical exam, she is found to leak with cough. Aa point is at -3 and Ap point is at -3, while Ba and Bp points are at -2 on pelvic exam, and she can contract her pelvic floor muscles during exam. She has no other medical problems and has not previously sought care for her incontinence. The next step is:

A. urodynamic testing.
B. pelvic floor muscle training.
C. biofeedback.
D. mid-urethral sling and cystocele repair.
E. mid-urethral sling and rectocele repair.

75. A 62-year-old man with bothersome LUTS has an AUA Symptom Score of 26 despite an adequate trial of an alpha-blocker and finasteride. DRE reveals a 40 gm benign prostate. His PSA six months ago was 2.3 ng/mL. Prior to laser prostatectomy, the next step is:

A. urinalysis.
B. repeat PSA.
C. uroflowmetry.
D. cystoscopy.
E. pressure flow urodynamics.

76. The most common site of sympathetic nerve injury during a RPLND is the:

A. aortorenal ganglion adjacent to the renal hilum.
B. sympathetic chain inferior to the renal artery.
C. aortic plexus posterolateral to the aorta.
D. inferior mesenteric plexus adjacent to the inferior mesenteric artery.
E. hypogastric plexus anterior to the aortic bifurcation.

77. A 50-year-old man is diagnosed with an asymptomatic, 15 mm stone in an anterior upper pole caliceal diverticulum. The best management is:

A. observation.
B. SWL.
C. ureteroscopy, laser incision of diverticular neck, and lithotripsy.
D. PCNL and dilation of the diverticular neck.
E. laparoscopic removal of stone and ablation of diverticulum.

78. A 52-year-old woman underwent a percutaneous needle biopsy of the right kidney. Two months later, she has hypertension. Upon examination, an abdominal bruit is heard in the right upper quadrant. A renal arteriogram demonstrates an arteriovenous fistula in the lower pole of the right kidney. She is asymptomatic with blood pressure well-controlled by medication and has a serum creatinine of 1.4 mg/dL. The next step is:

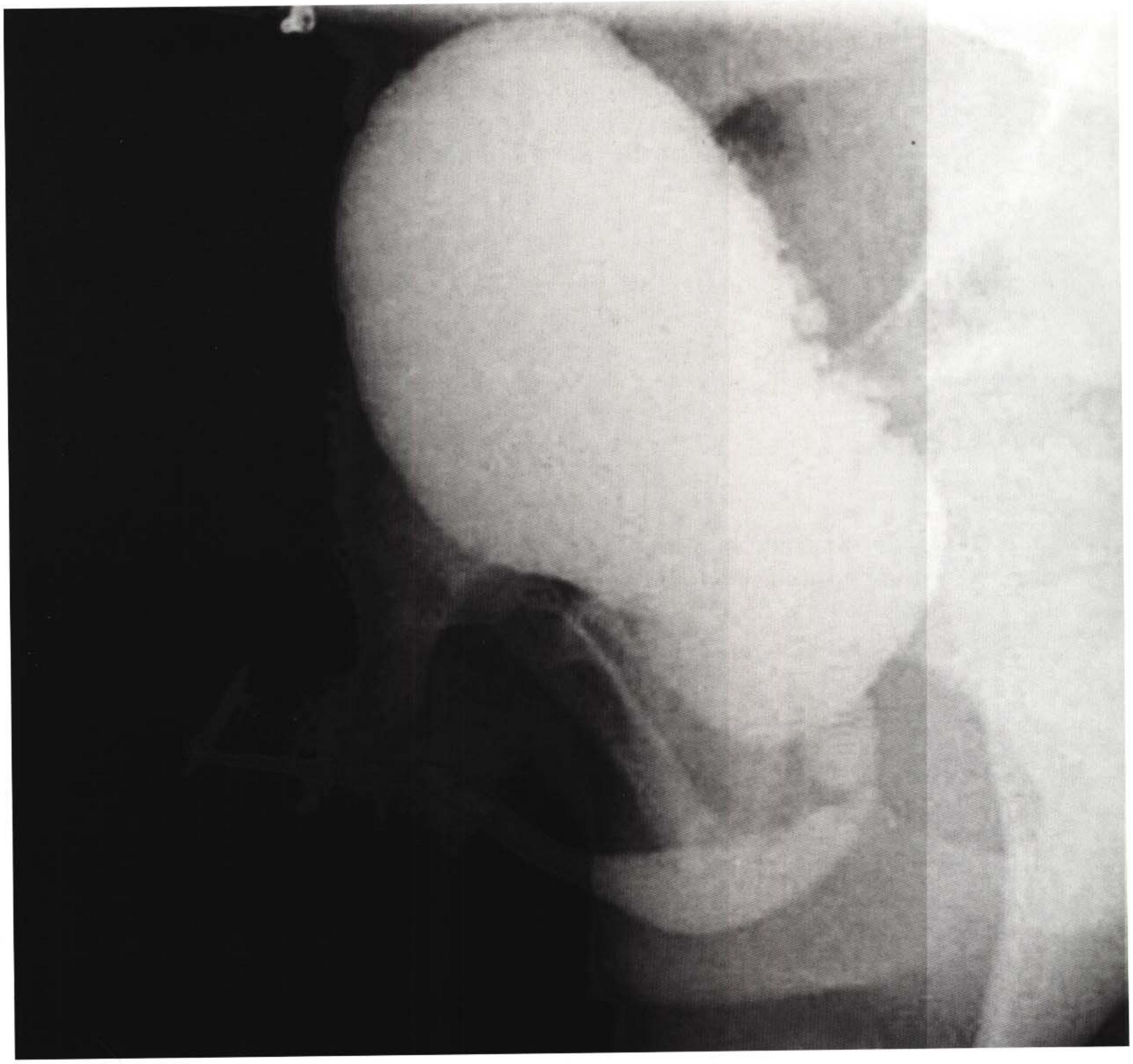
A. observation.
B. selective embolization.
C. partial nephrectomy.
D. operative ligation.
E. nephrectomy.

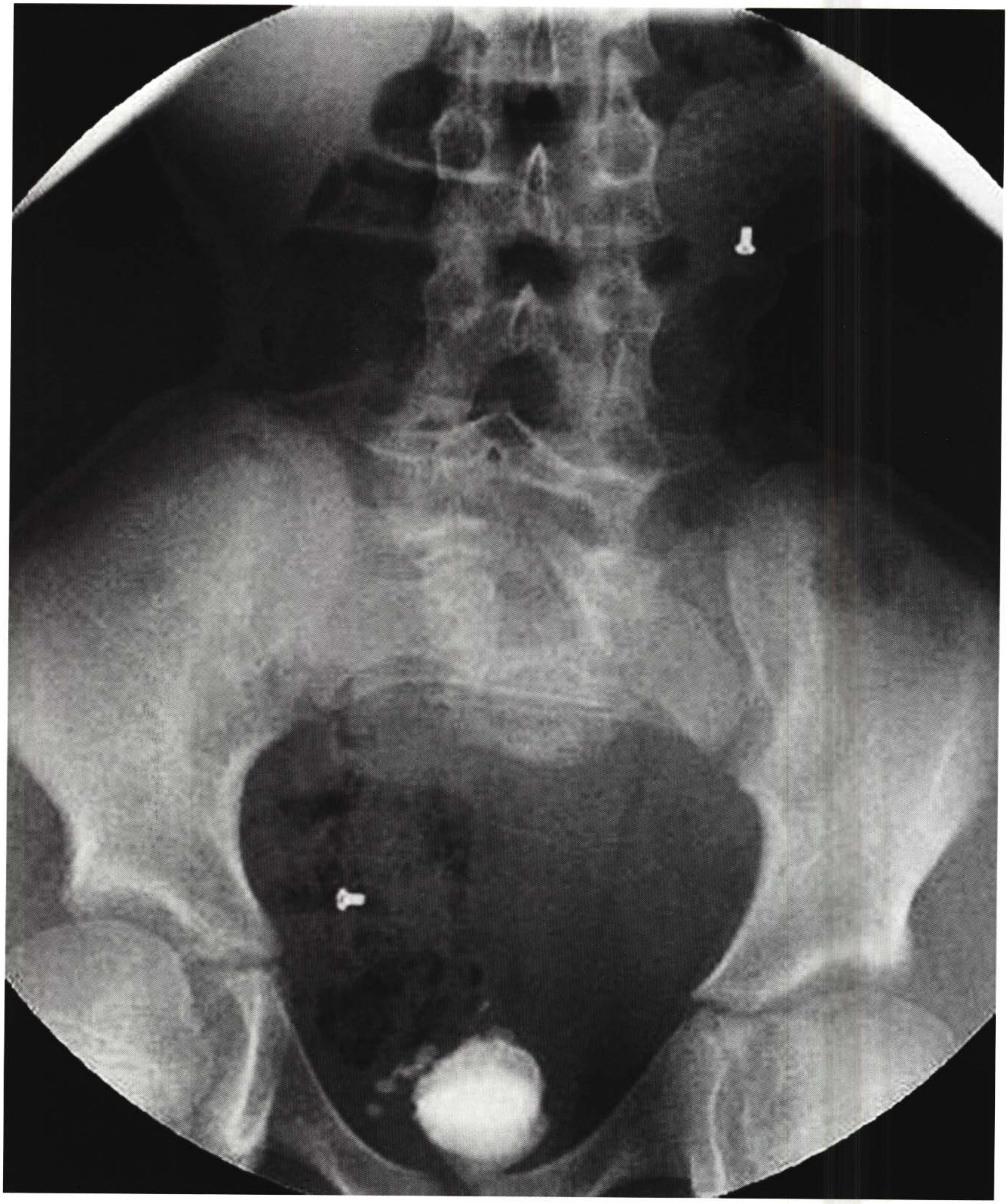
79. A 71-year-old man with a PSA of 14 ng/mL undergoes radical prostatectomy for cT2aN0M0 Gleason score 8 (4+4) prostate cancer. Final pathology is Gleason 7 (4+3) with negative margins, however, seminal vesicle and bladder neck invasion is found. In this patient, the feature associated with the highest risk of recurrence is:

A. PSA.
B. biopsy Gleason score.
C. seminal vesicle invasion.
D. bladder neck invasion.
E. prostatectomy Gleason score.

80. A ten-year-old boy has nocturnal enuresis, daytime dampness, and two febrile UTIs. Treatment with antibiotics fails to resolve his incontinence. An ultrasound reveals no hydronephrosis. KUB reveals no bladder stones, voiding and postvoid films from a VCUG are shown. The next step is timed voiding and:

A. retrograde urethrogram.
B. urodynamics.
C. alpha-blockers.
D. antimuscarinic therapy.
E. endoscopic valve ablation.





81. A 55-year-old man has a PSA of 1.7 ng/mL. His DRE reveals a suspicious prostatic nodule consistent with a cT3 prostate cancer. TRUS-guided prostatic biopsies reveal small cell carcinoma of the prostate. Metastatic evaluation is negative. The next step is:

A. systemic chemotherapy.
B. hormonal therapy.
C. XRT.
D. neoadjuvant and concurrent hormonal therapy and XRT.
E. radical prostatectomy and bilateral pelvic lymph node dissection.

82. The most appropriate peri-operative management of a patient undergoing adrenalectomy for Cushing's syndrome is:

A. hydration, alpha-blockers, and stress-dose steroids.
B. beta-blockers, stress-dose steroids, and careful glycemic control.
C. potassium sparing diuretics and stress-dose steroids.
D. stress-dose steroids and careful glycemic control.
E. potassium sparing diuretics, stress-dose steroids, and careful glycemic control.

83. A 48-year-old man with VHL has a 2 cm, solid, right adrenal mass in addition to multiple small (1-2 cm) bilateral renal masses. He is not hypertensive, but serum catecholamines are slightly elevated and the adrenal mass is bright on T2-weighted MRI scan. The next step is alpha-blockade and:

A. observation.
B. percutaneous biopsy of the adrenal mass.
C. partial adrenalectomy.
D. adrenalectomy.
E. adrenalectomy and partial nephrectomy.

84. A healthy, four-year-old boy has a one-month history of voiding every 15-20 minutes during the day. He is continent, denies nocturia, and has not had any UTIs. He has normal daily bowel movements. Urinalysis is normal. The next step is:

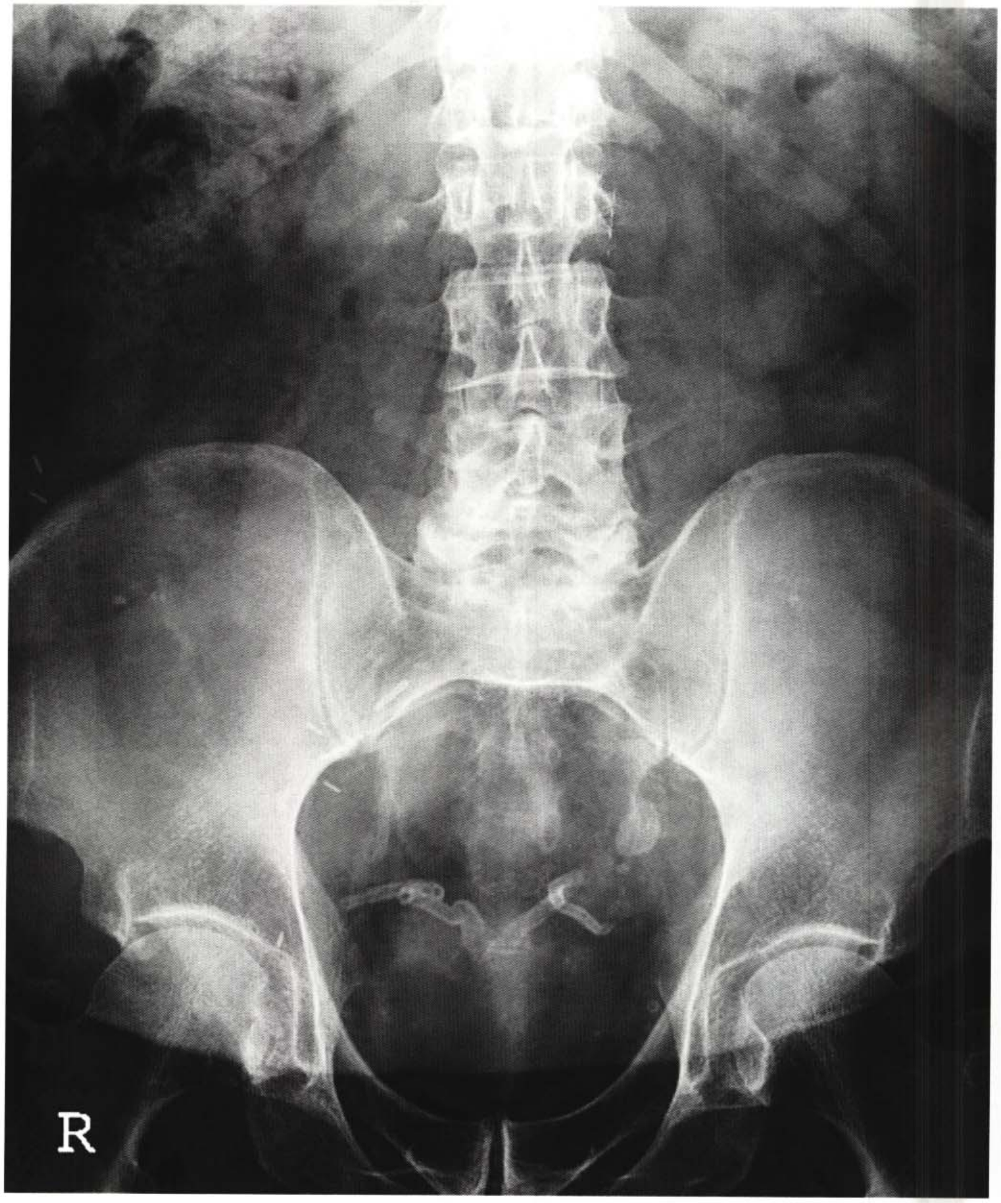
A. reassurance.
B. VCUG.
C. urodynamic study.
D. oxybutynin.
E. cystoscopy.

85. The most likely location for corporal perforation during penile prosthesis placement is:

A. dorsally.
B. ventrally.
C. at the septum.
D. distally (near glans).
E. proximally (near insertion).

86. The abdominal radiograph in a 60-year-old man is shown. The condition that is most commonly associated with this finding is:

A. sarcoidosis.
B. diabetes mellitus.
C. uncontrolled hypertension.
D. tuberculosis.
E. milk-alkali syndrome.



87. A recurrent calcium oxalate stone former has an isolated finding of marked hypomagnesuria on metabolic evaluation. The next step is:

A. discontinuation of allopurinol.
B. evaluate for an underlying bowel disorder.
C. oral magnesium supplementation.
D. increase intake of tofu and brown rice.
E. potassium citrate.

88. A newborn girl has a history of prenatal bilateral moderate hydronephrosis (anterioposterior pelvic diameter of 8 mm) without ureteral dilation. On day two of life, ultrasound reveals no hydronephrosis. The next step is:

A. no further evaluation needed.
B. serum creatinine at one week.
C. repeat ultrasound at six weeks of age.
D. VCUG.
E. radionuclide renal scan.

89. A three-year-old boy, with a history of daytime wetting and recurrent infections, is found to have bilateral grade 3 VUR. The most important factor in predicting risk of breakthrough UTI is:

A. age.
B. intrarenal reflux.
C. renal scarring.
D. circumcision status.
E. bladder and bowel dysfunction.

90. A 55-year-old patient with a mechanical aortic valve and penicillin allergy is scheduled to undergo urodynamic testing. Urinalysis on the day of testing is unremarkable. The indicated antibiotic prophylaxis is:

A. none.
B. ciprofloxacin.
C. vancomycin and gentamicin.
D. clindamycin and gentamicin.
E. trimethoprim-sulfamethoxazole.

91. The most potent stimulator of aldosterone secretion is:

A. ACTH.
B. angiotensin II.
C. renin.
D. potassium.
E. sodium.

92. A 53-year-old woman has recurrent stress incontinence despite two previous mid-urethral slings and a urethral bulking injection. A videourodynamic study shows no detrusor overactivity, with a maximal bladder capacity of 300 mL. Stress urinary incontinence is documented with a Valsalva LPP of 22 cm H_2O at 200 mL and again at maximum capacity. The urethra has minimal mobility with straining. The next step is:

A. pelvic floor muscle exercises with biofeedback.
B. off-label imipramine.
C. sacral neuromodulation.
D. retropubic mid-urethral polypropylene sling.
E. autologous pubovaginal sling.

93. A 15-year-old boy has right flank pain after being struck in the back with a lacrosse stick during a match five hours ago. Vital signs are normal. Urinalysis reveals clear urine with 10-20 RBCs, and hemoglobin is 15 g/dL. The next step is serial physical exams and:

A. repeat urinalysis.
B. abdominal ultrasound.
C. single phase CT scan of abdomen.
D. triphasic CT scan of abdomen.
E. MRI scan.

94. Patients with type 2 (proximal) RTA do not form renal calculi because they differ from those with type 1 (distal) RTA in the renal handling of:

A. calcium.
B. citrate.
C. bicarbonate.
D. phosphate.
E. sodium.

95. A 40-year-old man involved in an MVC has mild lower abdominal pain and gross hematuria. Radiologic evaluation reveals a normal urethra, a pelvic fracture with a large pelvic hematoma, and a small 1-2 cm extraperitoneal extravasation from the bladder. A 26 Fr urethral catheter repetitively clots off. The next step is:

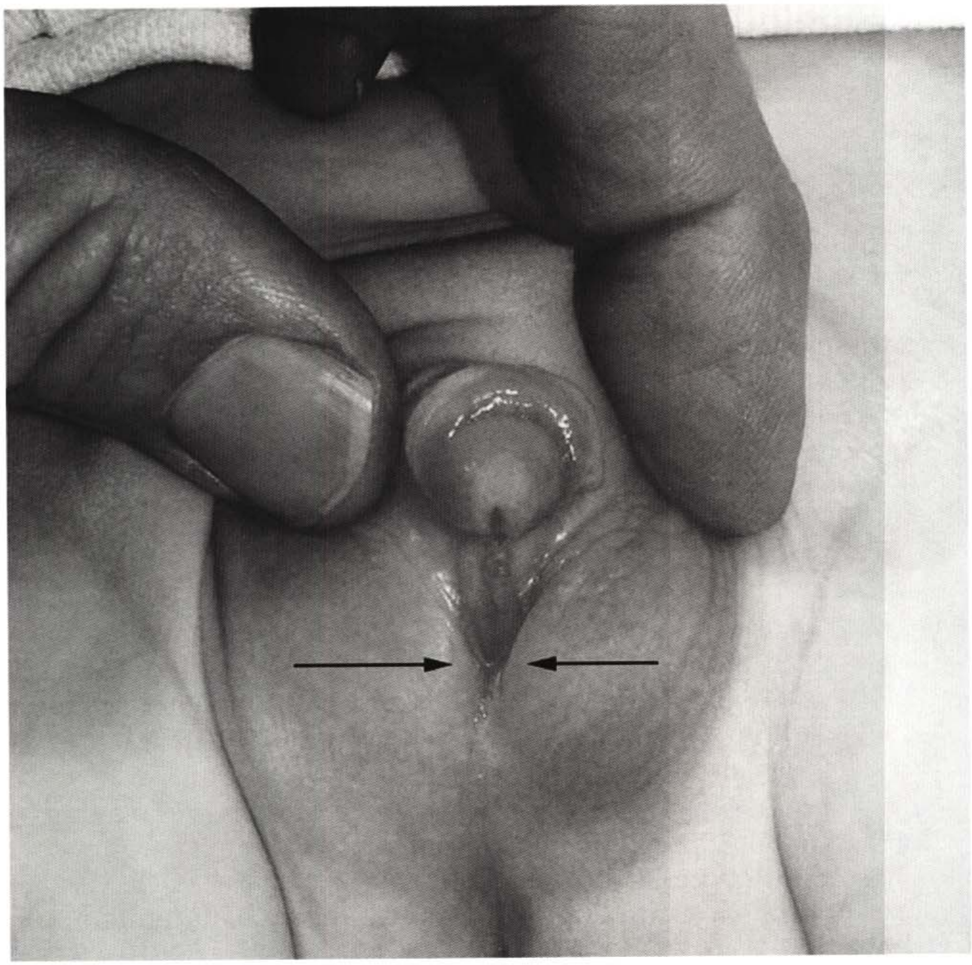
A. place three-way urethral catheter and begin continuous bladder irrigation.
B. percutaneous suprapubic tube placement.
C. cystoscopy with clot evacuation.
D. extraperitoneal exploration of bladder, repair of laceration, and catheter drainage.
E. intraperitoneal exploration of bladder, repair of laceration, and catheter drainage.

96. A recurrent calcium oxalate stone former has a urinary calcium of 298 mg/24 hr (normal < 250 mg/24 hr). He is interested in alternatives to traditional medical therapy. The next step is to recommend:

A. fish oil.
B. pyridoxine.
C. cranberry.
D. Echinacea.
E. Vitamin E.

97. In the patient whose external genitalia are shown, the arrows denote the urethral meatus. The embryologic origin of the structure that may cause difficulty with catheterization is:

A. Müllerian duct.
B. mesonephric duct.
C. urorectal septum.
D. urogenital sinus.
E. urethral plate.



98. A 48-year-old woman has an incidentally discovered 3 cm right adrenal mass on ultrasound. The next step is:

A. non-contrast CT scan.
B. contrast CT scan washout study.
C. gadolinium-enhanced MRI scan washout study.
D. ^{18}F-dopamine PET scan.
E. ^{131}I-MIBG radionucleotide imaging.

99. A ten-year-old boy has microscopic hematuria after treatment of a febrile upper respiratory infection. Repeat urinalyses, two weeks and three months later, are normal except for 5-8 RBC/hpf. His serum creatinine is 0.6 mg/dL, and a renal ultrasound is normal. A fasting spot urine calcium:creatinine ratio is elevated. The next step is:

A. cystoscopy.
B. C3 and ASO titers.
C. non-contrast CT scan.
D. 24-hour urine calcium.
E. renal biopsy.

100. A 75-year-old man with a prior history of a left radical nephrectomy develops intractable hypertension and has a right renal artery ostial stenosis of > 75%. His volume status and angiotensin II levels are best characterized, respectively, as:

A. euvolemic, normal.
B. euvolemic, elevated.
C. hypervolemic, suppressed.
D. hypervolemic, normal.
E. hypervolemic, elevated.

101. An 11-month-old boy has a right testicular mass. AFP is 50 IU/mL and hCG is normal. Abdominal-pelvic CT scan is normal. During inguinal exploration, frozen section biopsy reveals teratoma. The next step is:

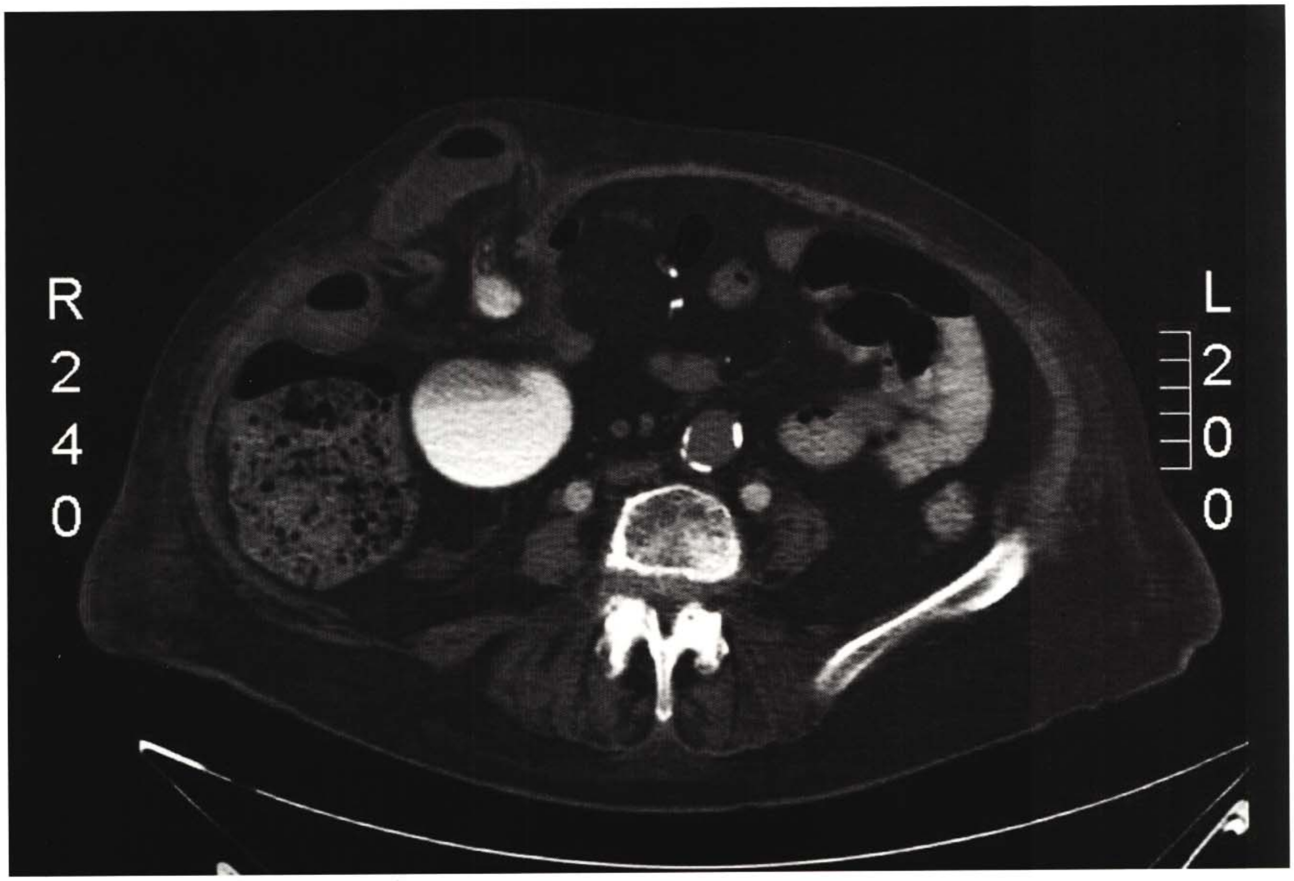
A. partial orchiectomy.
B. partial orchiectomy and serial scrotal ultrasounds.
C. orchiectomy.
D. orchiectomy and adjuvant chemotherapy.
E. orchiectomy and RPLND.

102. A four-year-old girl is febrile with left upper pole hydroureteronephrosis and a debris-filled ectopic ureterocele. In addition to broad-spectrum I.V. antibiotics, the next step is:

A. percutaneous nephrostomy.
B. cystoscopy and ureteral stent.
C. cystoscopy and ureterocele incision.
D. open excision of ureterocele.
E. open excision of ureterocele and ipsilateral ureteral reimplant.

103. An 80-year-old woman has vague abdominal pain and no urine output for 12 hours. She underwent cystectomy and ileal conduit urinary diversion for urothelial carcinoma three years ago. Serum creatinine is normal and CT loopogram images are shown. The diagnosis is:

A. stomal stenosis.
B. intestinal stricture due to lymphoid depletion.
C. parastomal hernia.
D. stomal prolapse.
E. intestinal volvulus.



104. A 45-year-old man amputates his penis at the level of the proximal shaft. In addition to the repair of the urethra, the following structures should be anastomosed:

A. dorsal arteries, deep dorsal vein, and dorsal nerves.
B. cavernosal arteries and dorsal nerves.
C. cavernosal arteries, dorsal arteries, deep dorsal vein, and dorsal nerves.
D. cavernosal arteries, dorsal arteries, and deep dorsal vein.
E. dorsal arteries and dorsal nerves.

105. A 68-year-old man undergoes a partial penectomy for a high-grade pT2 squamous cell carcinoma of the distal urethra. The margins are negative and the metastatic work-up is negative. The next step is:

A. observation.
B. adjuvant chemotherapy.
C. bilateral superficial inguinal lymphadenectomy.
D. bilateral pelvic and inguinal lymphadenectomy.
E. total penectomy.

106. A 76-year-old woman has hypertension, type 2 diabetes, and mild chronic renal insufficiency associated with proteinuria. The best reno-protective strategy includes initiation of:

A. amlodipine.
B. atenolol.
C. clonidine.
D. lisinopril.
E. hydrochlorothiazide.

107. Clostridium difficile infections with severe dehydration and electrolyte imbalance without abdominal distension or ileus are best treated with:

A. oral metronidazole.
B. oral vancomycin.
C. oral vancomycin and I.V. metronidazole.
D. I.V. metronidazole and rectal vancomycin.
E. I.V. vancomycin and rectal metronidazole.

108. A patient complains of stress urinary incontinence one year following radical prostatectomy. Physical evaluation confirms stress incontinence. However, videourodynamic studies fail to document stress incontinence with Valsalva maneuvers at 150 mL, 250 mL, and end-fill capacity of 500 mL with the patient reaching Valsalva intra-abdominal pressures of > 60 cm H_2O. The next step in the videourodynamic test is:

A. instill more volume.
B. remove the urethral catheter and repeat the Valsalva maneuver.
C. perform straining, tapping and Crede maneuvers to attempt to elicit involuntary bladder contractions.
D. increase Valsalva efforts to attempt to obtain pressures of > 100 cm H_2O pressure.
E. have patient void and check postvoid residual urine.

109. A 67-year-old woman is on active surveillance for a 3 cm renal mass. Initial percutaneous biopsy demonstrated oncocytoma. Her first follow-up imaging at three months shows no change. The next step is annual history, physical exam, and:

A. observation.
B. repeat biopsy at one year.
C. annual abdominal imaging (ultrasound or CT or MRI scan).
D. annual abdominal imaging (ultrasound or CT or MRI scan) and chest X-ray.
E. repeat biopsy at one year and annual abdominal imaging (ultrasound or CT or MRI scan).

110. A 16-year-old girl with spina bifida and a ventriculoperitoneal shunt has abdominal pain, fever, nausea, and vomiting. She has a prior augmentation cystoplasty, Mitrofanoff channel, and bladder neck ligation. A conventional cystogram is normal. A catheter is placed, and I.V. antibiotics are initiated. The next step is:

A. observation.
B. abdominal ultrasound.
C. CT cystogram.
D. endoscopy of the augmented bladder.
E. shunt series.

111. A 65-year-old woman has bothersome frequency, urgency, and nocturia one month after autologous fascial sling. Her postvoid residual is 300 mL, and urinalysis is negative. The next step is:

A. alpha-blocker.
B. urethral dilation.
C. CIC.
D. sling loosening.
E. sling incision.

112. An icteric, one-week-old boy has a right upper quadrant mass and scrotal ecchymosis. Ultrasound shows a complex, right suprarenal mass with internal echoes. Labs demonstrate anemia and normal plasma catecholamine levels. The next step is:

A. repeat ultrasound in two weeks.
B. needle biopsy of the mass.
C. ultrasound-guided percutaneous drainage.
D. bone marrow aspiration.
E. adrenalectomy.

113. A 33-year-old man with erectile dysfunction has a testosterone of 179 ng/dL. He takes chronic opioids for back pain. His wife is pregnant with their first child, and they would like to have more children. The next step is:

A. wean opioids.
B. testosterone gel.
C. testosterone injection.
D. urethral alprostadil suppositories.
E. sex therapy.

114. A 52-year-old man has new onset, bright red blood in his nephrostomy tube three days after right PCNL. He is hemodynamically stable; however, his hemoglobin has decreased from 13 mg/dL to 10 mg/dL. CT scan reveals a right perinephric hematoma. The next step is:

A. bed rest and serial hemoglobin levels.
B. nephrostomy tamponade catheter.
C. inject fibrin glue.
D. nephroscopy and fulguration.
E. selective angioembolization.

115. A 28-year-old, healthy woman has dysuria and frequency. Examination shows suprapubic tenderness and urinalysis reveals pyuria. Her pregnancy test is negative. The next step is:

A. urine culture.
B. single dose of trimethoprim/sulfamethoxazole.
C. single dose of ciprofloxacin.
D. three day course of trimethoprim/sulfamethoxazole.
E. three day course of ciprofloxacin.

116. After two weeks of behavioral therapy and oxybutynin, a 64-year-old woman continues to report frequency and urge incontinence. She has minimal side effects from the medication, and her urinalysis is normal. The next step is:

A. continue present therapy.
B. stop oxybutynin, start solifenacin.
C. add mirabegron.
D. cystoscopy.
E. intravesical onabotulinumtoxinA injections.

117. The best initial therapy for post-prostate biopsy sepsis is:

A. ciprofloxacin.
B. gentamicin.
C. imipenem.
D. piperacillin/tazobactam.
E. trimethoprim/sulfamethoxazole.

118. A six-year-old girl has low volume urinary incontinence and two documented afebrile UTIs. Timed voiding and treatment of constipation have only helped modestly with incontinence, and she had a third afebrile UTI. Uroflowmetry with EMG shows a voided volume of 180 mL with a low plateau-shaped curve and increased pelvic floor activity at the time of voiding. PVR is 50 mL. The next step is:

A. biofeedback.
B. antimuscarinics.
C. VCUG.
D. CIC.
E. onabotulinumtoxinA injection in the external sphincter.

119. As compared to conventional laparoscopic radical nephrectomy, hand-assisted nephrectomy is associated with:

A. prolonged ileus.
B. prolonged hospitalization.
C. increased wound complications.
D. increased narcotic requirements.
E. increased port site metastases.

120. An 81-year-old man has muscle-invasive urothelial carcinoma of the bladder with multifocal CIS. Metastatic evaluation is negative. GFR is 48 mL/min/1.7 m^2. The next step is:

A. chemoradiation therapy.
B. cisplatin-based chemotherapy followed by radical cystectomy.
C. carboplatin-based chemotherapy followed by radical cystectomy.
D. radical cystectomy.
E. radical cystectomy followed by adjuvant chemotherapy.

121. A recurrent calcium oxalate stone former has a urine calcium excretion of 180 mg/day (normal < 200 mg/day) and a uric acid excretion of 950 mg/day (normal < 800 mg/day). The next step is:

A. allopurinol.
B. chlorthalidone.
C. hydrochlorothiazide.
D. potassium citrate.
E. triamterene.

122. A 65-year-old man with metastatic clear cell RCC demonstrates progression after initial treatment with sunitinib therapy. His performance status is good. Level 1 evidence supports the use of:

A. bevacizumab.
B. sorafenib.
C. pazopanib.
D. temsirolimus.
E. everolimus.

123. Fifty boys were equally randomized to urethral stent or no urethral stent following hypospadias repair. Ten boys in the stented group and four boys in the non-stented group reported bladder spasm pain. The best test to determine if there was a significant difference regarding bladder spasm relative to stent status is:

A. Fisher's exact test.
B. Chi-square test.
C. analysis of variance (ANOVA).
D. logistic regression.
E. Pearson correlation coefficient.

124. A 66-year-old man with advanced prostate cancer is starting abiraterone therapy. The addition of prednisone is necessary in order to:

A. decrease inflammatory response and pain.
B. reduce nausea and anorexia.
C. minimize side effects of binding to CYP17.
D. inhibit the nuclear translocation of the androgen receptor.
E. decrease microtubule assembly.

125. The human papillomavirus (HPV) vaccine:

A. is effective if the individual has been previously exposed to HPV.
B. should be administered before the onset of sexual activity.
C. is FDA-approved for females only.
D. may cause a mild, transient HPV-like outbreak.
E. is effective against all known HPV subtypes.

126. A 55-year-old man has lower extremity thrombophlebitis and is started on warfarin. Two weeks later, he experiences abdominal pain and has a blood pressure of 84/50 mmHg. His hemoglobin is 13.5 gm/dL and serum potassium is 5.8 mEq/L. A CT scan demonstrates bilateral adrenal hemorrhage. The next step is I.V. fluids and administration of:

A. dexamethasone.
B. fresh frozen plasma.
C. Kayexalate®.
D. fluorohydrocortisone.
E. Vitamin K.

127. A 28-year-old man with NSGCT has a serum AFP of 2,500 IU/mL, small volume retroperitoneal nodes, and liver metastases. The best choice of chemotherapy is:

A. three cycles of BEP.
B. four cycles of EP.
C. four cycles of BEP.
D. four cycles of vinblastine, ifosfamide, and cisplatin (VIP).
E. high dose chemotherapy and bone marrow transplant.

128. A 68-year-old man with obesity, diabetes mellitus, and dialysis-dependent renal failure has painful abdominal skin lesions and a 2 cm painful eschar on the scrotum. The next step is:

A. observation.
B. corticosteroids.
C. amphotericin B.
D. biopsy.
E. surgical debridement.

129. A 19-year-old man has pulmonary function tests showing decreased diffusion capacity for carbon monoxide (DLCO), with a CT scan showing diffuse areas of ground-glass opacity after his second cycle of BEP chemotherapy. Prior to his next cycle of chemotherapy, the next step is to:

A. discontinue bleomycin.
B. repeat pulmonary function tests.
C. administer prophylactic hydrocortisone.
D. administer granulocyte colony stimulating factor.
E. change to vinblastine, ifosfamide, and cisplatin (VIP) chemotherapy.

130. A 17-year-old boy with cystinuria has a unilateral staghorn calculus. The next step is PCNL and:

A. D-penicillamine.
B. potassium citrate.
C. hydration with 1.5 L intake daily.
D. acetohydroxamic acid.
E. Renacidin® irrigation.

131. A 16-year-old boy with history of spina bifida and hydrocephalus status post back closure and ventricular-peritoneal shunt placement as a neonate, has sudden onset of nausea, vomiting, and lower abdominal pain four months after bladder augmentation. A catheterized urine specimen shows 3-5 WBC/hpf with moderate bacteria and a catheterized urine volume of 120 mL. His temperature 38.0° C, and his vital signs are normal. Physical examination reveals diffuse abdominal tenderness. The next step is:

A. I.V. antibiotics.
B. abdominal and pelvic ultrasound.
C. CT cystogram.
D. cystoscopy.
E. exploratory laparotomy.

132. A 14-year-old girl has recurrent uric acid stones. Her pediatrician has increased her fluid intake, limited dietary animal protein, and started allopurinol 50 mg/day. Urine pH is 5.5. The next step is:

A. increase allopurinol to 150 mg/day.
B. alpha-mercapotopropionylglycine.
C. limit sodium intake to < 2.3 gm/day.
D. potassium citrate.
E. increase intake of fruits and vegetables.

133. The event that initiates detumescence following a normal erection is:

A. a transient rise in intracorporal pressure.
B. a slow decrease in intracorporal pressure.
C. a rapid decrease in intracorporal pressure.
D. cavernosal smooth muscle relaxation.
E. endothelial relaxation.

134. A six-year-old boy who had a right pyeloplasty in infancy for a UPJ obstruction now has right flank pain and vomiting. An ultrasound performed six months ago demonstrated minimal hydronephrosis. Current imaging shows moderate right hydronephrosis with a 7 mm calculus at the UPJ. The next step is:

A. tamsulosin.
B. SWL.
C. ureteroscopic laser lithotripsy.
D. PCNL.
E. revision pyeloplasty and nephrolithotomy.

135. In a morbidly obese man with erectile dysfunction, the serum androgen profile is most likely to show:

A. ↓ total testosterone, ↓ estradiol, and ↓ serum hormone-binding globulin.
B. ↓ total testosterone, ↓ estradiol, and ↑ serum hormone-binding globulin.
C. ↓ total testosterone, ↑ estradiol, and ↓ serum hormone-binding globulin.
D. ↑ total testosterone, ↓ estradiol, and ↑ serum hormone-binding globulin.
E. ↑ total testosterone, ↑ estradiol, and ↓ serum hormone-binding globulin.

136. After successful pneumoperitoneum is achieved with a Veress needle, a 12 mm trocar is inserted above the umbilicus along the mid-line without laparoscopic assistance. Upon removal of the obturator, brisk, pulsatile blood is seen emanating from the trocar associated with abrupt tachycardia and hypotension to 85/60 mmHg. The next step is to fluid resuscitate, call for a vascular surgeon, and:

A. increase insufflation pressure.
B. close trocar valve, maintain its position, and perform exploratory laparotomy.
C. remove trocar and perform exploratory laparotomy.
D. place additional trocar to assess injury.
E. place hand-assist port and repair injury laparoscopically.

137. A 62-year-old man had eight intralesional collagenase injections for a 60 degree dorsal penile curvature one year ago. He now has a 25 degree dorsal penile curvature and moderate erectile dysfunction unresponsive to PDE-5 inhibitor, and wants further treatment. The next step is:

A. reassurance.
B. eight additional intralesional collagenase injections.
C. eight intralesional verapamil injections.
D. penile plication.
E. insertion of penile prosthesis.

138. Two weeks after undergoing a transobturator mid-urethral sling, a 45-year-old female, long distance runner complains of severe groin pain radiating to both inner thighs. Urinalysis is normal and PVR is 10 mL. Narcotics and anti-inflammatory medications are not helpful. The next step is:

A. observation.
B. refer to pain management.
C. refer to physical therapy.
D. urethrolysis.
E. sling removal and retropubic sling.

139. Two years after a low anterior resection with pelvic X-ray and chemotherapy for advanced colon cancer, a 69-year-old man develops fecaluria and pneumaturia. Cystoscopy shows an irregular area in the posterior bladder wall. The next step is:

A. fulguration.
B. biopsy.
C. partial cystectomy.
D. colon resection and bladder repair with omental interposition.
E. pelvic exenteration.

140. A 24-year-old man, with a gunshot wound shattering the L-4 vertebral body, achieves stable neurogenic bladder dysfunction nine months later. Pressure flow urodynamic studies will likely show:

A. detrusor overactivity, sphincter dyssynergia.
B. detrusor overactivity, normal sphincter EMG.
C. detrusor areflexia, sphincter dyssynergia.
D. detrusor areflexia, normal sphincter EMG.
E. detrusor areflexia, denervation potentials on EMG.

141. A 42-year-old man has a three month history of a 60 degree dorsal penile curvature and significant penile pain with erections. The best treatment is:

A. ibuprofen.
B. Vitamin E.
C. pentoxifylline.
D. penile stretching device.
E. intralesional collagenase injections.

142. While performing a right, robotic, partial nephrectomy and during an exchange of a robotic instrument by the bedside assistant, the new instrument is inadvertently advanced into the liver. The most likely cause of this injury is due to:

A. dislodgement of instrument faceplate.
B. forceful insertion of the instrument.
C. lack of visualization of instrument tip during advancement.
D. accidental activation of instrument arm clutch button.
E. defective instrument.

143. A 60-year-old, hypertensive man is well-controlled on a beta-blocker. CT angiography obtained for evaluation of a 3 cm, infrarenal, abdominal, aortic aneurysm incidentally reveals a 50% ostial stenosis of the left renal artery. Doppler ultrasound of the renal arteries, plasma renin, and serum creatinine are normal. The next step is:

A. serial blood pressure and renal clearance evaluations.
B. repeat CT angiogram and Doppler ultrasound of the renal arteries in one year.
C. split differential renal vein renin sampling.
D. percutaneous transluminal angioplasty.
E. percutaneous transluminal angioplasty with stent placement.

144. Angiotensin II maintains GFR during conditions of hypovolemia by causing:

A. afferent arteriolar vasodilation.
B. efferent arteriolar vasoconstriction.
C. increased renal medullary blood flow.
D. renal artery dilation.
E. passive sodium absorption.

145. A 14-month-old boy has a urethrocutaneous fistula following a hypospadias repair. The most important step for successful fistula repair is:

A. intra-operative urethral calibration.
B. use of fine absorbable sutures.
C. post-operative drip stent or catheter.
D. multi-layer closure.
E. vascularized interposition flap.

146. A 52-year-old commercial airline pilot has asymptomatic microhematuria on a screening medical exam. CT scan demonstrates multiple bilateral renal calculi, all less than 5 mm. The next step is cystoscopy and:

A. observation.
B. medical expulsive therapy.
C. potassium citrate.
D. SWL.
E. ureteroscopy.

147. A 60-year-old man is scheduled for a retroperitoneal laparoscopic radical nephrectomy. Following balloon dilation of the retroperitoneal space, a standard 12 mm trocar is inserted and secured to the fascia. During the operation, he develops subcutaneous crepitus and the end tidal CO_2 gradually climbs. The most likely cause is:

A. occult pulmonary bleb disease.
B. dislodgement of the trocar.
C. gas leakage around the trocar and fascia.
D. accidental entry into the peritoneal cavity.
E. entry into a venous sinus.

148. A 44-year-old man is scheduled to undergo renal transplantation. Pre-operatively, he has a 1.2 cm left pelvic stone in his native kidney. The next step is:

A. SWL.
B. ureteroscopy with laser lithotripsy.
C. PCNL.
D. left nephrectomy of native kidney.
E. proceed with renal transplantation.

149. A 20-year-old, healthy woman with no prior surgical history has lower abdominal pain and no urge to urinate for 36 hours. A catheter is placed with a return of 1300 mL. Neurologic evaluation is unremarkable. The urodynamic finding most likely to suggest the definitive diagnosis is:

A. impaired compliance.
B. low amplitude detrusor contractions.
C. high voiding pressure, low flow.
D. abnormal firing on electromyography.
E. detrusor external sphincter dyssynergia.

150. A 64-year-old, healthy man with back pain undergoes prostate biopsy for a PSA of 126 ng/mL. The biopsy reveals Gleason 8 (4+4) prostate cancer. Bone scan reveals multiple lesions in his lumbar spine, ribs, and right scapula. CT imaging reveals pelvic and retroperitoneal adenopathy. The next step is androgen deprivation therapy and:

A. ketoconazole.
B. sipuleucel-T.
C. enzalutamide.
D. abiraterone.
E. docetaxel.

American Urological Association Education and Research, Inc.
Office of Education

2017 Self-Assessment Study Program

Part II - Study Booklet
Comments, References, and Answers

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This report indicates the performance of the participant's peer group and offers the opportunity for comparing the peer group performance to the average of all participants who completed the examination. The Peer Group is identified at the top of the report. Be sure it is accurate for you. Years since completion of residency training determined into which peer group you were categorized.

1 - 5 years
6 - 10 years
11 - 15 years
16 - 25 years
26 - 35 years
Over 35 years
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Question #1

ANSWER=A

Most major causes of acute renal failure can be differentiated by urinalysis and urinary chemistries. With tubular cell injury, the kidney is no longer able to reabsorb filtered salt and water (under normal conditions, approximately 99% of filtered NaCl and water are reabsorbed and 50-80% of all filtered urea is excreted). In acute tubular necrosis, renal tubular function is injured resulting in loss of filtered water which causes a decrease in urinary osmolality. In addition, failure to resorb filtered sodium and failure to excrete urea (other functions of the renal tubular cell) will result in an increased urinary sodium and decreased urinary urea.

Paller MS: Pathophysiology of acute renal failure, in Greenberg A (ed): PRIMERON KIDNEY DISEASES. San Diego, Academic Press, 1994, pp 126-133.

Goldfarb DA, Poggio ED, Demirjian S: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 46, pp 1048-1049.

Question #2

ANSWER=B

Properties of uropathogens, sexual activity, feminine hygiene practices, and the use of an IUD and/or spermicide may increase the frequency of UTIs in predisposed women; however, they are not the most important etiologic factors. Many women who have uropathogenic bacteria present in their bowel, use various contraceptive and hygiene methods, and are sexually active without developing infections. E. coli must colonize the peri-urethral area before an uncomplicated infection can occur. Coliform organisms are recovered only rarely from the region of the vaginal vestibule, and external urethra in otherwise healthy women who do not have recurrent UTIs. It is postulated by most researchers that host factors, rather than specific pathogenicity of the micro-organisms, are the prime determinants of colonization. E. coli tend to adhere more to vaginal and buccal epithelial cells obtained from women with recurrent infection than to controls. This explains why certain women are prone to frequent recurrent infections. It would also explain why women with asymptomatic bacteruria are more prone to recurrent infection with marriage and pregnancy, and would account for UTIs associated with intercourse, various contraceptive methods, etc., in highly susceptible women.

Schaeffer AJ, Matulewicz RS, Klumpp DJ: Infections of the urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 12, pp 241-248.

Question #3

ANSWER=C

All the antibiotics listed including most tetracyclines, except doxycycline, are excreted primarily in the urine and their blood levels increase in the presence of renal insufficiency. Doxycycline is excreted mainly in the feces and does not require consideration for a dosage reduction in an azotemic patient.

Gilbert B, Robbins P, Livornese LL: Use of antibacterial agents in renal failure. MED CLIN AM 2011;95:677-702.

Question #4

ANSWER=E

Urethral and bladder neck injuries in women are rare but potentially devastating in their effects on long-term continence and bladder function. The urethra is short, mobile, and protected by the pubis in women. Female urethral and bladder neck injuries occur in 4.6% to 6% of women suffering pelvic fractures. The typical presentation includes gross hematuria or blood at the introitus. Despite blood in the vaginal vault, over 40% of female bladder neck and urethral injuries are missed in the emergency department and only half will be detected on CT cystogram. As a result, one must have a high index of suspicion and low threshold for performing a vaginal examination in females with pelvic fractures. Female bladder neck injuries should undergo immediate repair with primary closure of any vaginal lacerations to prevent fistula formation. Longitudinal tears of the female bladder neck have been associated with higher rates of incontinence. Such injuries should be repaired immediately to preserve the functional integrity of the bladder neck. In one recent series, despite operative repair, 16% of women developed vesicovaginal fistulas, 43% had moderate or severe lower urinary tract systems, and 38% had sexual dysfunction.

Black P, Miller E, Porter JR, Wessells H: Urethral and bladder neck injury associated with pelvic fracture in 25 female patients. J UROL 2006;175(6):2140-2144.

Morey AM, Brandes S, Dugi III DD, et al: UROTRAUMA: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014.
http://www.auanet.org/education/guidelines/urotrauma.cfm

Question #5

ANSWER=A

In a young patient with absent testes and normal penile development, testosterone stimulation was present at 16 weeks gestation. Loss of testicular function before this time leads to inadequate virilization. The finding of a blind-ending vas deferens and vessels is adequate to define the pathology and further exploration in this case is unnecessary. Chromosomal study of such cases is usually unnecessary as they carry none of the stigmata of intersexuality and will have a normal (46 XY) karyotype. At age of puberty, such anorchid patients will have elevated gonadotropin and require testosterone therapy.

Barthold JS, Hagerty JA: Etiology, diagnosis, and management of the undescended testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 148, p 3439.

Kolon TF, Herndon CDA, Baker LA, et al: EVALUATION AND TREATMENT OF CYPTORCHIDISM: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014.
http://www.auanet.org/education/guidelines/cryptorchidism.cfm

Question #6

ANSWER=D

This plain film AP view shows the lead lateral in the S3 foramen. The lateral view shows it too deeply placed, and this puts her at risk for deep stimulation of S2 roots causing leg and other lower extremity untoward stimulation. The use of the curved stylet would allow placement of the lead into S3 in a more medial to lateral configuration, thereby, allowing maximal contact of electrodes to the nerve. This is due to the nerve following a medial to lateral course. Revising leads to place deeper may create stimulation of leg and other untoward effects as mentioned above. S4 stimulation has not been shown to create better efficacy than S3. Lateral lead placement would not allow best contact with the nerve. It would be premature to remove the system and start onabotulinumtoxinA injections. If ultimately utilized, the dose onabotulinumtoxinA used for OAB is 100 units.

Jacobs SA, Lane FL, Osann KE, Noblett KL: Randomized prospective crossover study of InterStim lead wire placement with curved versus straight stylet. NEUROUROL URODYN 2014;33:488-492.

Vasavada SP, Rackley RR: Electrical stimulation and neuromodulation in storage and emptying failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 81, p 1899.

Question #7

ANSWER=D

The management of the infant with a PUV depends on the severity of the obstruction and the degree of any renal dysplasia present. The main problems arise in management of the infant with severe obstruction and compromised renal function with dehydration, acidosis, and sepsis. Initially, a small infant feeding tube, placed transurethrally, can provide bladder drainage. Once stabilized, valve ablation can be undertaken. Vesicostomy is reserved for infants who cannot undergo primary valve ablation because of the inadequate size of their urethra or for very small, unstable infants. If initial bladder level drainage does not result in satisfactory clinical improvement, temporary supravesical diversion may be considered; however, the vast majority of these patients will be found to have renal dysplasia, not ureterovesical obstruction, as the etiology of the persistently elevated creatinine.

Shukla AR: Posterior urethral valves and urethral anomalies, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 141, pp 3258-3259.

Question #8

ANSWER=A

The femoral nerve arises from the second, third, and fourth lumbar spinal segments. It appears at the lateral edge of the psoas muscle and descends into the thigh. It supplies a number of muscles including the quadriceps femoris complex, articularis genu, sartorius, pectineus, and iliopsoas. Ilioinguinal, genitofemoral, and lateral femoral cutaneous nerves are sensory nerves. The obturator nerve would be responsible for adduction of his leg.

Berry M, Bannister LH, Standring SM: Nervous system, in Bannister LH, Berry MM, Collins P, Dyson M, Dussek JE, Ferguson MWJ (eds): GRAY'S ANATOMY, ed 38. New York, Churchill Livingstone, 1995, chap 8, pp 1280-1282.

Palmer DA, Moinzadeh A: Surgical, radiographic, and endoscopic anatomy of the retroperitoneum, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 33, p 765.

Question #9 **ANSWER=A**

This infant has a compromised urinary tract and a neurogenic cause must be considered. The conus normally ends above L3 and spinal ultrasound is a convenient and accurate method of screening in the neonatal period. Given his low conus, a CMG would be important to see if filling curve and storage pressure are abnormal with abnormal urodynamic findings substantiating the presence of a clinically significant tethered cord. Circumcision is not mandatory. Vesicostomy at this point is premature and cystoscopy is not necessary. The hydronephrosis, in this case, is related to the bladder dysfunction and a MAG-3 scan is unnecessary.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, pp 3285-3286.

Question #10 **ANSWER=C**

The presence of small volume testes with an elevated FSH suggests the presence of non-obstructive azoospermia. Most men with non-obstructive azoospermia will have sperm retrievable from the testes that can be used in conjunction with in vitro fertilization for the wife. The most important characteristic to determine eligibility for treatment will be the wife's age and fertility. Screening for obstruction with vasography is not of value. Testicular biopsy may be useful as an indicator for success with intracytoplasmic sperm injection (ICSI) and sperm harvest. With an elevated FSH, diagnostic biopsy is not indicated.

Carpi A, Sabanegh E, Mechanick J: Controversies in the management of nonobstructive azoospermia. FERT STERIL 2009;91:963-970. Epub 2009 Mar 21.

Niederberger CS: Male infertility, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 24, p 573.

Question #11 **ANSWER=E**

This woman has hypertension due to primary hyperaldosteronism. The CT scan suggests hyperplasia of the left adrenal gland. In order to differentiate hyperplasia from an adenoma, adrenal vein sampling for aldosterone will show elevated levels on the left and suppressed levels on the right if an adenoma is present. MRI scan will not differentiate between an adenoma and hyperplasia. A serum aldosterone:renin ratio will not lateralize the lesion. If adrenal vein sampling does not lateralize, then medical therapy with spironolactone is indicated, rather than nifedipine, which is not potassium sparing. If an adenoma is present, surgical removal is the best treatment.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, pp 1541-1544.

Question #12 **ANSWER=E**

This patient has urodynamically demonstrable bladder outlet obstruction. While antimuscarinics may help his irritative symptoms (e.g., frequency, urgency, urge incontinence), it will not address his primary obstructive problem, and indeed, may worsen his symptoms. Obtaining a serum creatinine is not useful or recommended in the BPH guidelines for work-up of LUTS. Cystoscopy may help assess prostatic size, but would be unlikely to change management as his DRE shows a 35 gm prostate on exam. OnabotulinumtoxinA injections are not approved for, nor do they have documented efficacy for the treatment of LUTS related to bladder outlet obstruction. In this patient, TURP is the next step for the treatment of bladder outlet obstruction.

Welliver C, McVary KT: Minimally invasive and endoscopic management of benign prostatic hyperplasia, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 105, pp 2506-2509.

Question #13 **ANSWER=C**

Given the positive margin, this patient requires further therapy around the scar. This can include the excision of the scar, laser therapy, or topical therapy with either 5-FU or imiquimod. Podophyllin is used to treat genital warts and has no role in the treatment of carcinoma. Partial or complete penile amputation and radiation therapy are too aggressive for this patient with CIS.

Pettaway CA, Crook JM, Pagliaro LC: Tumors of the penis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 37, pp 855-856.

Question #14 **ANSWER=C**

The differential diagnosis of a wet umbilicus in the infant, includes patent urachus, omphalitis, simple granulation of the healing stump, patent vitelline or omphalomesenteric duct, infected umbilical vessel, and external urachal sinus. The finding of a urinary creatinine level in the fluid draining from the umbilical stump suggests a patent urachus. While probing the urachal tract may aid in diagnosis, a VCUG should confirm the diagnosis and fully evaluate the lesion and any associated bladder outlet obstruction. Cauterization of the tract and closure of the fistula are not indicated until VCUG is performed to rule-out bladder outlet obstruction. Urethral catheter drainage will not definitively treat the patent urachus if obstruction is present.

Frimberger D, Kropp BP: Bladder anomalies in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 138, p 3176.

Question #15 **ANSWER=D**

In an older patient with medical problems, ureteroscopic biopsy, electro-resection, and laser destruction have been utilized to successfully manage small, low grade, non-invasive ureteral

Question #21

ANSWER=C

The majority of patients tolerate BCG instillation well. In 2,602 patients treated with different strains of BCG, high fever (> 39 degrees C) was noted in 2.9% of patients. Life-threatening BCG sepsis was noted in 0.4%. Fever > 39.5 degrees C that does not resolve within 12 hours despite antipyretic therapy is potentially dangerous. Since most cases of BCG sepsis are associated with I.V. absorption of BCG, it is recommended that BCG not be given until at least one week after tumor resection. In the patients who died from BCG sepsis, almost all cases had traumatic catheterization before instillation therapy, or they were treated too early after TURBT or biopsy. Treatment should include isoniazid 300 mg, rifampin 600 mg, and ethambutol 1200 mg daily. After antituberculosis drugs are started, corticosteroids may be given if the patient is toxic. Given the timing of the signs and symptoms in relation to the BCG instillation, acute UTI is much less likely to be a cause of this patient's symptoms.

Jones JS: Non-muscle-invasive bladder cancer (Ta, T1, and CIS), in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 93, p 2215.

Question #22

ANSWER=A

Percutaneous or surgical revascularization of the internal pudendal arteries is not indicated owing to the patient's age and associated risk factors for atherosclerotic vascular disease, (e.g., hypertension and smoking). There is no indication for venous ligation. Owing to the vascular disease, penile injections may not be successful, but should be implemented prior to insertion of a penile prosthesis.

Burnett AL II: Evaluation and management of erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 27, pp 664, 667.

Question #23

ANSWER=A

With sperm in the vas and a patent abdominal vas deferens, right vasovasostomy is indicated. For men with clear fluid in the vas deferens, the prognosis for return of sperm to the ejaculate is excellent after vasovasostomy alone; therefore, left vasovasostomy is also indicated. Epididymal exploration and intra-operative testis biopsy will not provide material information to affect treatment decisions. Varicocelectomy and vasovasostomy should not be performed simultaneously as venous outflow from the testis after varicocele repair is dependent primarily on the vasal vessels that are divided during vasectomy or vasovasostomy, and testicular atrophy may result.

Goldstein M: Surgical management of male infertility, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 25, p 590.

Question #24

ANSWER=E

Patients with tangential or superficial wounds clearly away from the urethra and that can void without urethral bleeding or hematuria, do not require a retrograde urethrogram. However, these patients should be explored except those with clearly superficial injuries. Patients with stab wounds usually can be expected to have preservation of potency. While most surgeons recommend retrograde urethrography in all patients with penetrating penile trauma, experience in the literature suggests that few truly occult urethral injuries occur in these patients. In patients with low velocity injuries, only those with blood at the meatus, hematuria, difficulty voiding, or injury near the urethra may require retrograde urethrography. Most patients will require retrograde urethrography to rule-out urethral injury and many will need surgical exploration to rule-out and repair any corporal injury or other cause of bleeding. However, select patients, such as the one in this patient scenario, do not require retrograde urethrography. Some patients with minimal wounds can be treated non-operatively. Pelvic MRI scan is not indicated for penetrating genital injuries but may be helpful in blunt genital trauma.

Morey AF, Zhao LC: Genital and lower urinary tract trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 101, p 2379.

Goldman HB, Dmochowski RR, Cox CE: Penetrating trauma to the penis: Functional results. J UROL 1996;155:551-553.

Question #25

ANSWER=A

The initial renal response to complete ureteral obstruction is to increase glomerular perfusion pressure. Postglomerular vasodilation without any change in the preglomerular vessels would result in lower glomerular perfusion pressures, not higher. Likewise, afferent arteriolar constriction and renal artery vasoconstriction would result in decreased glomerular perfusion pressure. Of the choices listed, only preglomerular vasodilation and efferent arteriolar constriction lead to increased glomerular perfusion pressures. Preglomerular vasodilation is the first response in both unilateral and bilateral ureteral obstruction. Efferent arteriolar constriction does occur as a second phase in bilateral ureteral obstruction but does not occur in unilateral obstruction.

Meldrum KK: Pathophysiology of urinary tract obstruction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 48, pp 1094-1095.

Question #26

ANSWER=D

Entero-pouch fistulas have been reported after ileal and right colon urinary diversion. The diagnosis should be suspected in patients who present with gastrointestinal symptoms and metabolic acidosis. These fistulas are most common after pelvic irradiation. Conservative therapy can be effective with low residue diet and continuous pouch drainage. Further diagnostic evaluation with colonoscopy or pouch endoscopy is of little value, and biopsy or fulguration may enlarge the fistula. Bilateral nephrostomy drainage alone will not achieve maximal drainage of the pouch. Open surgical exploration may be required if this regimen fails. Hyperalimentation alone, without catheter drainage, is insufficient to resolve the fistula.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, pp 2131-2132.

Question #27 **ANSWER=E**

The presence of invasive urothelial carcinoma of the prostate carries a high risk of urethral recurrence and is a contraindication to orthotopic bladder replacement. All patients undergoing cystectomy should be counseled about the possibility that intra-operative findings might change the planned form of urinary diversion, and all of the alternatives should be discussed prior to surgery. Of the choices listed, the continent cutaneous urinary diversion is the best option for a patient who is strongly averse to an external appliance and has agreed to the concept of CIC.

Skinner EC, Daneshmand S: Orthotopic urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 99, pp 2347-2349.

Question #28 **ANSWER=B**

The conus medullaris of the spinal cord terminates between the second and third lumbar vertebra in the newborn. In the adult, the spinal cord usually terminates between the first and second lumbar vertebra. Understanding this relationship is critical to be able to diagnose a tethered cord. Cord tethering is often assumed to be present when the conus is below the L2 interspace, with termination below L3 resulting in an absolute diagnosis. It is important to note that imaging features support, rather than make, the diagnosis. The clinical diagnosis of a tethered cord is based on the radiologic findings of tethering along with the clinical findings of "neurological and musculoskeletal signs and symptoms." Clinical findings that help support the diagnosis of a tethered cord are foot deformities, leg weakness or pain, gait abnormalities, lower back pain, scoliosis, and fecal or urinary incontinence. From a urologic standpoint, urinary incontinence or symptomatic voiding difficulties will be present in up to 50% of patients with a tethered cord, and urodynamic abnormalities will be found in approximately 70% of patients.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, p 3285.

Question #29 **ANSWER=D**

The patient has bulky retroperitoneal masses from NSGCT. Although the primary tumor was teratoma, there was a component of immature teratoma which would classify the patient as a NSGCT. Despite teratoma only, this patient should be treated like metastatic NSGCT, and the correct treatment is three cycles of BEP. The patient has "good risk" NSGCT, defined as primary testicular or retroperitoneal disease, no pulmonary metastases, and negative or low tumor markers. For "good risk" patients, three cycles of BEP are equivalent to four cycles of EP. If the masses remain after chemotherapy, which is likely in patients with teratoma, he will require an extensive post-chemotherapy RPLND. A PET CT is not necessary as the patient needs chemotherapy regardless of the result. A biopsy is not necessary for the same reason.

Stephenson AJ, Gilligan TD: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 34, pp 788-789.

Question #30

ANSWER=A

It is unusual for extravasation of urine to reach the thigh. This suggests that the normal layers that more commonly contain urinary extravasation have been disrupted. The first layer that has to be disrupted for urine to reach the thigh must be Buck's fascia. The dartos fascia, Colles' fascia, and insertion of the fascia lata represent a continuation of the same fascial layer.

Chung BI, Sommer G, Brooks JD: Surgical, radiographic, and endoscopic anatomy of the male pelvis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 68, p 1612.

Question #31

ANSWER=D

The daily risk of acquisition of bacteriuria when an indwelling catheter in-situ is three to seven percent. The rate of bacterial acquisition is higher for women and older persons. Heath care surveys in the USA report that UTIs are the fourth most common infection, accounting for 13% of health care infections; two-thirds of UTIs are directly related to the presence of an indwelling urinary catheter. Catheter-associated UTIs result in increased morbidity and mortality among hospitalized patients. Factors proven to reduce catheter-associated UTIs include: a closed drainage system, early catheter removal, and an aseptic insertion technique. Prophylactic antibiotics (systemic or topical) have not been shown to reduce the risk of CAUTI, and indeed some studies have revealed their use increased the presence bacterial resistance and candiduria. Routine meatal cleansing, intravesical antibiotic irrigation, or hydrogen peroxide instillations into the drainage bag have not been demonstrated to reduce the frequency of catheter-associated infections.

Hooton TM, Bradley SF, Cardenas DD, et al: Diagnosis, prevention, and treatment of catheter-associated urinary tract infection in adults: 2009 International Clinical Practice Guidelines from the Infectious Disease Society of America. CLIN INFECT DIS 2010;50:625-663.

Averch TD, Stoffel J, Goldman HB, et al: AUA White Paper on catheter-associated urinary tract infections: Definitions and significance in the urological patient. UROL PRACTICE 2015;2:321-328.

Question #32

ANSWER=E

The pudendal nerve arises from the dorsal nerve roots at S2, S3 and S4. The pudendal nerve provides innervation of the striated external sphincter; transection would cause sphincter weakness. It also gives arise to the dorsal penile nerve which provides somatic sensation to the penis. Interruption of the pudendal nerve will cause decreased penile sensation, but not affect psychogenic erections. This may be clinically applicable to those patients who undergo dorsal rhizotomy. The sympathetic chain arising from T10 to L2 is responsible for ejaculation, and will not be impacted by transection of the sacral dorsal nerve roots.

Vasavada SP, Rackley RR: Electrical stimulation and neuromodulation in storage and emptying failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 81, p 1909.

Question #33

ANSWER=A

Potassium citrate comes in a variety of formulations. Potassium citrate tablets are produced with a wax matrix to optimize their sustained release. It is not infrequent for these wax matrix tablet casts to be visualized in stools. This is most frequently seen in individuals with ileostomies. Patients should be reassured that the medicine is being delivered. To insure that the citrate is being absorbed, it would be appropriate to check the urine pH. If the urine is acidic, it may be necessary to increase the potassium citrate dose.

Pearle MS, Goldfarb DS, Assimos DG, et al: MEDICAL MANAGEMENT OF KIDNEY STONES: AUA GUIDELINE: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014. http://www.auanet.org/education/guidelines/management-kidney-stones.cfm

Question #34

ANSWER=D

Hyperuricemia can be seen during the initial treatment of acute leukemias and lymphomas, in response to either chemotherapy or radiotherapy. The rapid destruction and cellular lysis of neoplastic cells results in a rapid rise in uric acid levels. Elevated urinary uric acid crystals will, in the presence of acid urine, precipitate within the distal convoluted tubules, leading to intrarenal obstruction and renal failure. Prophylaxis (and treatment) is accomplished by a combination of alkalinization, allopurinol, and hydration.

Goldfarb DA, Poggio ED, Demirjian S: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 46, pp 1045-1046.

Question #35

ANSWER=C

The VCUG demonstrates the presence of posterior urethral valves and vesicoureteral reflux. The majority of neonates with the coexisting findings of posterior urethral valves and oligohydramnios prior to 20 weeks gestation will be found to have pulmonary hypoplasia and neonatal respiratory distress. The presence of pulmonary hypoplasia in these infants still accounts for the majority of neonatal deaths in boys with posterior urethral valves. Urosepsis can occur, but usually not in the neonatal period with early diagnosis and initiation of appropriate prophylactic antibiotics. Acute renal failure can present in the first week of life but can be managed with neonatal peritoneal dialysis to avoid immediate renal induced mortality. Urinary ascites is common with high-grade urethral obstruction, but is usually protective for the kidneys, and is almost always successfully managed with bladder drainage and broad spectrum antibiotics. Posterior urethral valves are not associated with lethal congenital cardiac disease.

Shukla AR: Posterior urethral valves and urethral anomalies, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 141, p 3259.

Question #36 **ANSWER=D**

The wild type VHL tumor suppressor gene product suppresses the expression of VEGF, a potent stimulator of angiogenesis, through down-regulation of hypoxia-inducible factor 1 (HIF1). Mutation or loss of the VHL tumor suppressor gene leads to dysregulated expression of VEGF, which contributes to the neovascularity associated with RCC. This pathway is of critical importance to practicing urologists as most recently developed tyrosine kinase inhibitors target the pathway directly or indirectly. All of the other listed genes are not directly regulated by HIF1, and, therefore, are not directly affected by VHL loss.

Walther MM, Enquist EG, Jennings SB, et al: Molecular genetics of renal cell carcinoma, in Vogelzang NJ, Scardino PT, Shipley WU, Coffey DS (eds): COMPREHENSIVE TEXTBOOK OF GENITOURINARY ONCOLOGY. Baltimore, Williams & Wilkins, 2000, chap 9, pp 116-128.

Neumann HP, Zbar B: Renal cysts, renal cancer and von Hippel-Lindau disease. KID INTL 1997;51:16-26.

Campbell SC, Lane BR: Malignant renal tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 57, pp 1321-1324.

Question #37 **ANSWER=D**

Permanent lower urinary tract dysfunction occurs in 15-20% of patients following radical pelvic surgery. The typical pattern is one of detrusor areflexia or hypocontractility in the presence of fixed residual striated sphincter tone. This fixed tone represents a functional obstruction that frequently results in decreased detrusor compliance. Although poor proximal sphincter function can also occur (intrinsic sphincter deficiency), this is often masked by prostate bulk in male patients.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, pp 1781-1782.

Question #38 **ANSWER=D**

In a woman presenting with the acute onset of chronic incontinence following a surgical procedure, she should be evaluated for possible simultaneous upper UTI and ureteral or combined ureteral-vaginal fistulas to rule-out the presence of a perivesical abscess or fluid collection. In the absence of pelvic infection, immediate repair is justified. In the presence of a large diameter vesicovaginal fistula in an irradiated field, an abdominal approach will concurrently allow an omental pedicle flap to be interposed between the irradiated bladder and vaginal wall tissues. In the presence of an irradiated field, obliteration of dead space, good bladder drainage, control of infection, and interposition of healthy tissue are critical elements to successful fistula closure. Proximal urinary diversion with bilateral percutaneous nephrostomy tubes with delayed repair should be considered in patients where the initial evaluation suggests the presence of a concurrent pelvic abscess. An endoscopic approach with fulguration of the fistula tract and urethral catheter or suprapubic tube drainage may be considered in vesicovaginal fistulas where the diameter of the fistula is < 5 mm in size and radiographic evaluations (fistulogram) suggests the presence of a long-necked and tortuous fistula.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, pp 2111-2112.

Question #39

ANSWER=C

Incidentally discovered small asymptomatic renal tumors do not mandate a waiting period prior to transplantation. Repeating the CT scan with contrast risks further nephrotoxic injury with preexisting borderline renal function, and will not change the management of the renal mass. Although partial nephrectomy may carry the advantage of preserving additional renal mass, this is not applicable to this patient. The appropriate management in this setting is simultaneous nephrectomy and transplantation.

Gritsch HA, Blumberg JM: Renal transplantation, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 47, pp 1072-1075.

Question #40

ANSWER=D

A variety of host defense and bacterial virulence factors contribute to the pathogenesis of UTIs. Host defenses include high urine osmolality, low pH, high urea, efficient micturition, and a number of urine inhibitors of bacterial adherence (e.g., Tamm-Horsfall protein, lactoferrin, oligosaccharides, and mucopolysaccharides). Immune responses to UTIs affect hormonal immunity (secretory IgA), as well as, cytokine production (IL6, IL8). Cranberry juice contains substances that inhibit the adherence of uropathogenic bacteria to uroepithelial cells. Cranberry ingestion does not have a substantive effect on urine pH, urine osmolality, secretory IgA, or interleukin levels.

Schaeffer AJ, Matulewicz RS, Klumpp DJ: Infections of the urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 12, p 274.

Jepson RG, Williams G, Craig JC: Cranberries for preventing urinary tract infections. Cochrane Database of Systematic Reviews 2012, issue 10. Art. No.: CD001321. DOI: 10.1002/14651858.CD001321.pub5.
http://www.cochrane.org/CD001321/RENAL_cranberries-for-preventing-urinary-tract-infections

Question #41

ANSWER=D

This neonate, with a normal-sized phallus for a male (> 2.5 cm), could be a female with elevated testosterone due to congenital adrenal hyperplasia. Therefore, an elevated testosterone does not equate with the presence of a testicle. Levels in newborns of LH, FSH, and testosterone can be normal or elevated with many intersex disorders and does not confirm the presence of a testicle. Elevated 17-hydroxyprogesterone and increased urinary ketosteroids would be findings of adrenal insufficiency, but would not confirm the presence of a testicle. An hCG stimulation test with an increase in testosterone may be of value, but the increase should be > 20 fold. In addition, the infant may already have an excessively elevated testosterone level which could mask the findings of an hCG stimulation test. A 46 XY karyotype does not confirm the presence of testes. Müllerian-inhibiting substance is secreted by testicular Sertoli cells and is the one test which would diagnostically confirm the presence of at least one testicle.

Kolon TF, Herndon CDA, Baker LA, et al: EVALUATION AND TREATMENT OF CYPTORCHIDISM: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014. p 12-13. http://www.auanet.org/education/guidelines/cryptorchidism.cfm

Barthold JS, Hagerty JA: Etiology, diagnosis, and management of the undescended testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 148, pp 3439-3440.

Question #42

ANSWER=E

This is an unusual site for a benign ureteroileal stricture, and there is a high likelihood that this is the result of tumor recurrence in the ureter. Therefore, observation is not a good option. Endoscopic management, whether it be ureteroscopically or percutaneously, is unlikely to work, and does not establish the etiology of the obstruction. Since the kidney has little remaining parenchyma, reimplantation makes little sense, and, therefore, the best treatment is nephroureterectomy.

Smith AK, Matin SF, Jarrett TW: Urothelial tumors of the upper urinary tract and ureter, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 58, pp 1376-1377.

Question #43

ANSWER=D

Primary spermatocytes undergo one round of meiosis creating secondary spermatocytes which are 2N in DNA content and haploid. These subsequently undergo a second round of meiosis to form round spermatids which are 1N in DNA and haploid, which are the final products. The spermatids then eventually metamorphose into mature spermatozoa (spermiogenesis).

Turek PJ: Male reproductive physiology, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 22, p 526.

Question #44 **ANSWER=A**

Complications of inguinal lymph node dissection can include debilitating lower extremity edema, wound infection, skin flap necrosis, DVT, hemorrhagic events, and sepsis. The greatest risk factor for these complications is palliative indication, primarily in patients with advanced disease with impending erosion into the vessels or through the skin. In the series from MD Anderson Cancer Center, complication rates (minor and major combined) were 35% for a prophylactic dissection, 36% for a therapeutic dissection, and 67% for palliative indications. In addition, most major complications occurred in the latter or "palliative" group. The reasons for the increased complication rate is presumably due to reduced lymphatic and venous drainage and compromised blood supply. Together, these factors affect the viability of skin flaps and lymphatic flow, and the majority of the complications are due to infectious causes. While diabetes, heart disease, and obesity are all important surgical considerations, they have not been directly associated with complications related to inguinal node dissection. Similarly, prior chemotherapy has not been associated directly with increased complications after inguinal node dissection.

Pettaway CA, Crook JM, Pagliaro LC: Tumors of the penis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 37, pp 859-860.

Question #45 **ANSWER=E**

All patients with an output > 200 mL/hr have post-obstructive diuresis and should be closely monitored. High risk patients with chronic obstruction, edema, congestive heart failure, hypertension, weight gain, and azotemia are most likely to exhibit a post-obstructive diuresis after the release of obstruction. In the high risk patient, a spot check urine for osmolality, sodium, and potassium will allow for the determination of the type of post-obstructive diuresis and will provide guidance for further management. High risk patients should have vital signs, including postural blood pressure and output measured hourly. D5 1/2 NS is an appropriate replacement fluid in the patient with an elevated BUN and creatinine, but generally, replacement is given at half of the previous hour's urine output.

Meldrum KK: Pathophysiology of urinary tract obstruction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 48, p 1102.

Question #46 **ANSWER=B**

Abdominal CT studies with contrast offer a fast and all-inclusive evaluation of the abdomen in cases of trauma. With the advent of rapid image acquisition, the abdominal, renal vasculature, and the renal cortex will enhance. However, delayed images of the abdomen will usually be needed to see contrast in the distal ureter. If the initial CT cuts reveal a severe renal fracture, perinephric hematoma, or perinephric fluid collection, and especially if medial extravasation of contrast is found, delayed films are usually necessary to assess for the presence of contrast in the distal ureter. The presence of a UPJ disruption should be considered when there is absence of contrast in the ipsilateral distal ureter on a delayed CT study. CT cuts to assess for this finding are ideally taken 10-20 minutes post-contrast infusion. If delayed CT cuts reveal no contrast in the distal ureter, the next step is emergent surgery with a retrograde pyelogram to confirm the presence of the UPJ injury and subsequently surgical repair. If the UPJ and ureter are intact, the patient may be managed in a non-operative fashion. Arteriography is not indicated as vital signs are stable.

Matsumoto JS, LeRoy AJ: Pediatric imaging, in Belman AB, King LR, Kramer, SA (eds): CLINICAL PEDIATRIC UROLOGY, ed 4. Martin Duntz, Florence KY, 2002, pp 125-126.

Husmann DA: Pediatric genitourinary trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 154, p 3539.

Question #47

ANSWER=C

Several randomized trials have revealed that ureteral stents are not required after uncomplicated ureteroscopic extraction of distal ureteral stones, even after balloon dilation of the ureter or intracorporeal lithotripsy. Ureteral strictures are uncommon after ureteroscopy for distal stones, whether or not a stent is inserted. Stents do not impact stone free rate, but do increase post-procedure pain, urinary symptoms, and narcotic use.

Matlaga BR, Krambeck AE, Lingeman JE: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 54, p 1283.

Question #48

ANSWER=A

The most likely diagnosis is acute interstitial nephritis. The best treatment is to discontinue the offending drug, treat any related hypertension that may be present and limit protein intake. The vast majority of patients will have symptoms which spontaneously resolve. If symptoms persist, renal biopsy may be necessary to confirm the diagnosis. Both ampicillin and cephalosporins may cause interstitial nephritis and could actually be harmful if used in this setting. Indeed, adequate treatment for a UTI can be achieved in a single dose of medication and additional antibiotics are not indicated in this patient with a sterile gram stain at this time. The use of prednisone should be reserved following confirmation of the diagnosis with a renal biopsy. There is no role for the use of antihistamines in the treatment of interstitial nephritis.

Goldfarb DA, Poggio ED, Demirjian S: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 46, pp 1043-1044.

Question #49

ANSWER=D

Detrusor LPP is the most reliable urodynamic parameter to predict the risk of upper tract deterioration after sphincterotomy. A detrusor LPP of higher than 40 cm H_2O indicates that the sphincterotomy has failed, and may serve as a guide to determine whether a repeat sphincterotomy is necessary. Abnormal compliance, which may be detected on CMG, may also be a worrisome finding, but there is much less established predictive value. To date, there is no correlation of urethral function tests (urethral pressure profile, Valsalva LPP, EMG) to upper tract deterioration.

Nitti VW, Brucker BM: Urodynamic and video-urodynamic evaluation of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 73, p 1727.

Question #50 **ANSWER=C**

The International Continence Society has established a standardized system to quantify pelvic organ prolapse. This classification is known as the POPQ system, an acronym for pelvic organ prolapse quantification. The system uses the hymenal ring as its central identification point. The hymen was chosen over the vaginal introitus because it can be more precisely located within the vaginal vault; all measurements are based from this location. This classification avoids use of the terms, cystocele or rectocele, recognizing that the actual organ prolapsing may be unable to be determined by a physical examination. The examination to determine POPQ stage is performed in a dorsal lithotomy position with the patient straining. The POPQ staging system has excellent inter-observer and intra-observer reliability and has become the standard for reporting outcomes following prolapse repair. The staging system is, however, not perfect and can be significantly affected by patient positioning, with the degree of the prolapse being more severe if the patient is examined with the head of the table raised to 45 degrees or higher. In addition, it fails to assess for unilateral or asymmetric defects. The POPQ staging system is defined as: Stage 0 - no prolapse, Stage 1 - the most distal portion of the prolapse is more than 1 cm above the hymen, Stage 2 - the most distal portion of the prolapse is +/-1 cm above or below the hymen, Stage 3 - the most distal portion of the prolapse protrudes > 1 cm below the hymen and the total vagina has not prolapsed, and Stage 4 - the entire vagina everts (i.e., complete prolapse).

Kobashi KC: Evaluation and management of women with urinary incontinence and pelvic prolapse, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 71, pp 1698-1999.

Question #51 **ANSWER=C**

Active surveillance is a reasonable option for patients with low-risk prostate cancer. This patient's risk profile makes him a reasonable candidate for this approach. However, a six-core biopsy is likely inadequate tissue sampling to truly identify indolent disease. Therefore, initiation of active surveillance protocol with quarterly PSA and repeat biopsy in one year is premature and immediate systematic prostate rebiopsy is the next step. Additional imaging, with either bone scan or pelvic CT scan, is unnecessary in low-risk patients and would be inappropriate in this setting. There is no data supporting the use of finasteride in the management of prostate cancer.

Carter HB, Dall'Era MA: Active surveillance of prostate cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 113, p 2634.

Question #52 **ANSWER=B**

Large amounts of Randall's plaque are unique to idiopathic calcium oxalate stone formers and are invariably composed of calcium apatite crystals. Using papillary biopsies obtained during the time of PCNL, Randall's plaque were found to initially form on the basement membrane of the thin limbs of the loops of Henle and grow by the continued deposition of calcium apatite and organic matrix. With growth, the plaque will spread through the interstitium and eventually penetrate the urothelium, exposing the plaque to urine where it will serve as an anchor for urinary solutes. Although Randall's plaque can be found in other stone formers, Randall's plaque has been found to be a prerequisite for kidney stone formation in idiopathic calcium oxalate stone formers.

Pearle MS, Antonelli JA, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 51, p 1176.

Question #53

ANSWER=B

The use of fluoroscopic imaging in urological surgery requires a basic knowledge of radiation protection principles so that the dose to the patient, physician, and ancillary staff can be minimized. It is important to remember that with an increase in patient size, the dose rate will be greater and accumulate faster. In terms of manipulating the operational factors in fluoroscopy, there is generally a trade-off in terms of image quality and radiation dose. Increasing the tube current results in greater image quality and increased dose to the patient and staff. Increasing the tube kilovoltage diminishes image quality (less contrast), but is usually associated with less radiation dose if the tube current is appropriately reduced. Decreasing the image intensifier to skin distance usually increases image quality depending on focal spot size and decreases the dose to the patient without significantly changing the dose to staff. Removing the grid decreases image quality as well as the radiation dose to patient and staff. Increasing the source to skin distance usually improves image quality and decreases the dose to the patient without significantly changing the dose to staff.

Geise RA, Morin RL: Radiation management in uroradiology, in Pollack HM, McClennan BL (eds): CLINICAL UROGRAPHY, ed 2. Philadelphia, WB Saunders Co, 2000, vol 1, chap 3, pp 13-18.

Bishoff JT, Rastinehad AR: Urinary tract imaging: Basic principles of computed tomography, magnetic resonance imaging, and plain film, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 2, p 27.

Question #54

ANSWER=D

Parathyroid levels are suppressed in patients with absorptive hypercalciuria as a result of transient elevation of serum calcium due to increased intestinal calcium absorption. The other conditions are associated with secondary elevation of PTH due to PTH-resistance (i.e., obesity, African American), renal calcium loss, and/or elevated serum phosphorus.

Pearle MS, Antonelli JA, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 51, p 1183.

Question #55

ANSWER=C

A meta-analysis of seven randomized trials comprising nearly 1,500 patients with Ta-T1 bladder cancer, with a median follow-up of 3.4 years, demonstrated that one immediate post-TURBT instillation of intravesical mitomycin C resulted in a 40% reduction in tumor recurrence. Patients undergoing resection of single or multiple tumors benefited, and benefit was not affected by tumor size. The timing of instillation, however, appears to be critical. In all studies documenting efficacy, the instillation was given within the first 24 hours post-TURBT. One study has demonstrated that if the instillation is given 24 hours after tumor resection, the risk of tumor recurrence increased two-fold. Peri-operative instillation is contraindicated in the setting of overt or suspected extra or intraperitoneal perforation or concurrent dilation of a urethral stricture or urethral injury, as severe complications, (e.g., chronic pain, bladder necrosis, necrosis of adjacent soft tissue, and necrosis of either the corporal spongiosus or cavernosum), have all been reported in these settings. Intravesical mitomycin C is most effective in alkaline urine.

Jones JS: Non-muscle-invasive bladder cancer (Ta, T1, and CIS), in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 93, pp 2215-2216.

Sylvester R, Oosterlinck W, van der Meijden A: A single immediate postoperative instillation of chemotherapy decreases the risk of recurrence in patients with stage Ta T1 bladder cancer: a meta-analysis of published results of randomized clinical trials. J UROL 2004;171:2186-2190.

Question #56

ANSWER=D

Prostate MRI scan, especially with combined endorectal and phase-array coils, is used in prostate cancer staging with up to 82% accuracy. The T1 and T2 weighted images are helpful in differentiating between post-biopsy hemorrhage, which presents as a high T1 and a low T2 lesion, and prostate cancer, which presents as a low T1 and low T2 lesion.

Barnes AS, Tempany CMC: Image-guided minimally invasive therapy, in Richie JP, D'Amico (eds): UROLOGIC ONCOLOGY. Philadelphia, Elsevier Saunders, 2005, chap 7, p 115.

Bishoff JT, Rastinehad AR: Urinary tract imaging: Basic principles of computed tomography, magnetic resonance imaging, and plain film, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 2, p 56.

Question #57

ANSWER=C

The scan reveals bilateral small renal masses. The largest of which is in the left kidney and on this T1-weighted image, the high intensity of the lesion indicates fat within the tumor. This is consistent with an angiomyolipoma. This finding in conjunction with pulmonary lymphangioleiomyomatosis (LAM) is indicative of tuberous sclerosis complex (TSC). Familial leiomyomatosis would be associated with skin fibromas and renal carcinoma. VHL does not cause pulmonary LAM. Birt-Hogg-Dubé is associated with chromophobe tumors and oncocytomas. It is also associated with lung cysts which can result in spontaneous pneumothorax, but not LAM. Hereditary papillary RCC has no common pulmonary manifestations and does not cause angiomyolipomas.

Pope JC IV : Renal dysgenesis and cystic disease of the kidney, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 131, pp 3023-3025.

Question #58 **ANSWER=B**

Chronic antibiotic use may reduce normal levels of Oxalobacter formigenes in the intestine. This anaerobe metabolizes as much as 50% of ingested oxalate. High calcium diets are associated with decreased oxalate absorption. Few cystic fibrosis patients have ileal absorption disorders. Vitamin C and glycine, while associated with oxalate metabolism, are unlikely to increase urinary levels significantly. An emerging treatment for reduced intestinal Oxalobacter formigenes is probiotics.

Pearle MS, Antonelli JA, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 51, p 1181.

Question #59 **ANSWER=A**

Temsirolimus is a specific inhibitor of the mammalian target of rapamycin (mTOR) kinase which is a component of intracellular signaling pathway involved in growth and proliferation of cells. Level 1 evidence in a recent study comparing temsirolimus to interferon alpha focused on patients with a poor prognosis, (e.g., poor risk metastatic RCC patients). Poor risk metastatic RCC patients in this trial had to have at least three of the following poor risk features: LDH > 1.5 times upper level or normal, Hgb below normal, calcium > 10 mg/dL, time from diagnosis of cancer > 12 months, metastases spread to multiple organs, and/or Karnofsky score = 60 or 70. This patient has multiple features that put him in a poorer risk group, including multiple sites of metastasis, anemia, and hypercalcemia. In patients with poor risk features, I.V. weekly infusion of temsirolimus, when compared to interferon, prolongs overall survival, and is the first agent that has demonstrated an overall survival advantage in this category of patients. Sunitinib, bevacizumab, and sorafenib have not been shown to improve overall survival or prolong survival in patients with multiple poor risk features.

Hudes G, Carducci M, Tomczak P, et al: Temsirolimus, interferon alfa, or both for advanced renal cell carcinoma. NEJM 2007;356:2272-2281.

Srinivasan R, Linehan WM: Treatment of advanced renal cell carcinoma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 63, pp 1514-1515.

Question #60 **ANSWER=A**

Individuals with a neurogenic bladder that are being managed with CIC will have bacteriuria 40-80% of the time. Only symptomatic infections (i.e., pain, fever, new onset of urinary incontinence, or foul smelling, cloudy, urine lasting longer than three days) should be treated with antibiotics. The presence of intermittent cloudy urine and/or mild pyuria is not enough to warrant antibiotic treatment. Overtreatment of asymptomatic bacteriuria in this patient population will lead to resistant organisms that are difficult to manage. The efficacy of prophylactic antibiotics in the setting of recurrent symptomatic infections in patients on CIC is not entirely clear. Gentamicin bladder irrigations have been shown to be effective in some patients with recurrent symptomatic infections. Changing CIC to sterile technique will likely be ineffective as well as unfeasible. Circumcision can reduce the risk of infection and should be considered if recurrent symptomatic UTIs occur. Vesicostomy is not indicated for non-febrile UTIs in this patient.

Cooper CS, Storm DW: Infection and inflammation of the pediatric genitourinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 127, p 2932.

Wyndaele JJ: Complications of intermittent catheterization: Their prevention and treatment. SPINAL CORD 2002;40:536-541.

Question #61

ANSWER=C

Endogenous creatinine and creatinine clearance is the most widely used surrogate for GFR. In the presence of normal renal function, 90% of creatinine is filtered and 10% is secreted by the proximal tubules. As GFR declines, tubular secretion may contribute up to 35% of all creatinine removal at levels of 40-80 mL/min. The commonly utilized antibiotic trimethoprim blocks the tubular secretion of creatinine. Since creatinine is produced at a steady state, the serum creatinine will rise, but the GFR does not change. Captopril and spironolactone might alter renal perfusion causing a change in the GFR that leads to an altered creatinine level. Cisplatin has a direct nephrotoxic effect but would not raise creatinine without altering GFR. Cephalexin could increase the serum creatinine through an acute drug-induced injury to the kidney, such as interstitial nephritis.

Goldfarb DA, Poggio ED, Demirjian S: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 46, p 1060.

Question #62

ANSWER=A

Several useful prognostic parameters exist for tumor progression in patients with Ta/Tis/T1 bladder cancer. The most important of these are tumor stage, grade, and presence of CIS. Tumor size and multiplicity are other factors that may predict progression. Early recurrence is not associated with progression of the disease, except in patients with BCG treatment failure. The relationship between p53 status and tumor progression remains unclear. Age and tumor location do not impact progression risk.

Jones JS: Non-muscle-invasive bladder cancer (Ta, T1, and CIS), in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 93, p 2208.

Millan-Rodriguez F, Chechile-Toniolo G, Salvador-Bayarri J, et al: Multivariate analysis of the prognostic factors of primary superficial bladder cancer. J UROL 2000;163:73-78.

Question #63 **ANSWER=B**

This child has massive grade 5 reflux into the right kidney. No information is available from the VCUG about the left kidney or the function of the right kidney. The abnormal calyces on the VCUG suggest that the function may be compromised. Urodynamics are often not interpretable in the face of high grade reflux (VUR). A DMSA renal scan is needed to determine function of the right kidney, which will help determine whether reconstruction versus nephrectomy is suitable. Ureteral reimplantation is not indicated before assessment of renal function. An MR urogram will also give this information; however, the MR urogram will most likely require either a general anesthetic or closely monitored sedation. Creatinine clearance may be abnormal, but it will not be possible to tell which kidney has the deficit.

Peters CA, Skoog SJ, Arant BS Jr, et al: AUA GUIDELINE FOR MANAGEMENT AND SCREENING OF PRIMARY VESICOURETERAL REFLUX IN CHILDREN. American Urological Association Education and Research, Inc, 2010. p 5. http://www.auanet.org/education/guidelines/vesicoureteral-reflux-a.cfm

Question #64 **ANSWER=D**

Percutaneous radiofrequency ablation of small renal masses has been offered in recent years as a less invasive method of treatment. Treatment efficacy is generally determined by follow-up CT or MRI scan evaluating for enhancement within the lesion. If enhancement is noted, this is considered suggestive of residual or recurrent tumor. In most series, between 5-20% of patients treated by radiofrequency ablation require re-treatment within the first year due to persistent enhancement. While long-term data is not available, those patients undergoing a second ablative procedure appear to have a similar outcome to those treated effectively in the first ablation. While partial nephrectomy could be considered in this patient, the frequency of persistent enhancement after the first ablation suggests that a second ablation is warranted prior to proceeding with more aggressive therapy. Additionally, this is an older patient with multiple co-morbid conditions, suggesting a less invasive approach is warranted prior to surgical intervention. Biopsy is not indicated in this patient given the fact that the previous ablation may obscure histologic interpretation and that the biopsy outcome would not likely influence the desire to complete treatment. PET scan has poor specificity and would not be informative in this case of localized renal mass. As the enhancement likely represents residual tumor, it is not likely to abate with continued observation.

Tracy CR, Cadeddu JA: Nonsurgical focal therapy for renal tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 62, pp 1489-1490.

Question #65 **ANSWER=C**

This patient has developed an uncomplicated large diameter > 5 mm vesicovaginal fistula following abdominal hysterectomy. Because of its size, it is very unlikely to close with prolonged Foley catheterization. Endoscopic treatment with fulguration is an option for management in small diameter fistula < 5 mm and is most successful if the fistula tract is long neck and tortuous. In this patient, immediate surgical repair is indicated. The outcomes are not adversely affected by intervening at six weeks. Given the location of the fistula and the transabdominal approach used in the prior hysterectomy, a transvaginal approach with interposition of labial or peritoneal flaps between the vesical and vaginal tissues at the time of repair would be optimal.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, p 2109.

Question #66

ANSWER=B

Small cell carcinoma of the bladder is a relatively rare tumor that may arise in combination with urothelial carcinoma. It is usually biologically aggressive with early vascular and muscular invasion. These malignancies usually respond to but are not cured by chemotherapy regimens. Neither partial or initial radical cystectomy nor intravesical chemotherapy is appropriate in this setting. Radiation or extirpative surgery alone may result in cure rates of 5-20%. However, neoadjuvant chemotherapy followed by surgery or radiation therapy results in cure rates of 40-65%. Therefore, the best treatment is chemotherapy followed by local treatment such as surgery or radiation if the patient does not progress.

Guzzo TJ, Vaughn DJ: Management of metastatic and invasive bladder cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 94, p 2223.

Question #67

ANSWER=B

Elevated urinary cortisol levels confirm the diagnosis of Cushing's syndrome, but do not provide information about the etiology of the condition. The next step to determine the etiology is to measure a plasma corticotrophin or ACTH level. This will determine if the Cushing’s is ACTH-dependent or ACTH-independent. If ACTH levels are not elevated, then the likely source is adrenal, and an abdominal CT scan with attention to the adrenals is appropriate. However, it is preferable and more efficient to determine if ACTH levels are elevated as the etiology of the Cushing’s is unlikely to be of adrenal origin if ACTH is elevated. The high-dose dexamethasone suppression test, and the meta pyrone tests are used in patients with ACTH-dependent Cushing's syndrome to determine if the source of excess ACTH secretion is pituitary or ectopic in nature, and are only appropriate if serum corticotrophin levels are elevated. The high-dose dexamethasone suppression test and the metapyrone test have now largely been supplanted by direct measurements of ACTH in the venous plexus downstream from the pituitary gland (inferior petrosal sinus sampling).

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1537.

Question #68

ANSWER=D

The success of chemotherapy for high-stage seminoma has led investigators to examine its use in low-stage disease. Its use has been supported by several non-randomized trials. In addition, the Medical Research Council recently completed a randomized clinical trial comparing carboplatin with standard retroperitoneal irradiation in the setting of stage 1 seminoma. The two treatments had similar efficacy. Therefore, for stage 1 seminoma, the correct chemotherapy agent is carboplatin.

Stephenson AJ, Gilligan TD: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 34, pp 808-809.

Question #69

ANSWER=A

The patient has bilateral UPJ obstructions incidentally noted on an abdominal CT scan with the radiographic evaluation revealing little to no renal tissue on the left side. In this asymptomatic patient with advance age and multiple medical co-morbidities, observation is most appropriate. Indications for intervention include the development of symptoms, calculi, or infection. Since there is no renal tissue on the left, UPJ repair, whether laparoscopic or open, will not improve renal function and is inappropriate. If the patient became symptomatic, a nephrectomy could be considered.

Nakada SY, Best SL: Management of upper urinary tract obstruction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2016, vol 2, chap 49, pp 1107-1108.

Question #70

ANSWER=B

Following bladder neck procedures in children with neurogenic sphincter incompetence, the unmasking or development of detrusor hostility can be seen in a subset of children. This is manifested by a decrease in bladder compliance and/or increase in detrusor overactivity. In severe cases, hydronephrosis and secondary reflux can develop. Thus, the bladder and upper tracts must be monitored very carefully following bladder outlet procedures when augmentation is not performed concomitantly. When bladder hostility is recognized, antimuscarinics should be instituted as first line management. However, this will not be effective therapy in approximately one-third of patients. In this patient population, serial urodynamic studies and onabotulinumtoxinA injections can be used for management, or alternatively definitive treatment with a bladder augmentation can be pursued. In the presence of new onset of hydronephrosis and VUR, antibiotic prophylaxis will not be adequate therapy. The outlet resistance is likely adequate for continence, and the new incontinence is more likely due to worsening bladder dynamics. Bladder augmentation without a trial of antimuscarinics would not be the next step. Ureteral reimplantation is not indicated, as the low grade VUR may resolve with bladder management.

Adams MC, Joseph DB, Thomas JC: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 145, p 3336.

Question #71

ANSWER=D

The management of high-grade PIN has changed. With the standard biopsy now including 10 to 12 cores, it is no longer considered mandatory for patients to undergo immediate rebiopsy of their prostate. However, in the setting of accompanying atypical small acinar proliferation (ASAP), immediate rebiopsy and/or additional examination of the original biopsy with deeper sections is usually recommended. In this case, however, the patient has atypical adenomatous hyperplasia (adenosis), which is felt to be a benign process and, therefore, does not require immediate rebiopsy. The patient, therefore, should be treated as if he has isolated high-grade PIN and should have serial PSA monitoring. If the PSA is increased in six months, repeat biopsy can be considered.

Zynger DL, Yang XJ: High grade prostatic intraepithelial neoplasia and other atypical lesions of the prostate. AUA UPDATE SERIES 2008, vol 27, lesson 35, p 341.

Epstein JI: Pathology of prostatic neoplasia, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 110, p 2593.

Question #72

ANSWER=B

Bariatric surgery patients typically develop enteric hyperoxaluria, which should be managed with calcium supplementation. Calcium will bind intestinal oxalate, thereby reducing absorption of free oxalate, and ultimately decreasing urinary oxalate. Increasing fluids will have little effect as these patients are chronically dehydrated, and the other treatments do not address the problem.

Lipkin ME, Ferrandino MN, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 52, p 1220.

Question #73

ANSWER=C

The urodynamic data documents involuntary detrusor contractions and bladder outlet obstruction, most likely due to BPH. The most reasonable pharmacologic approach is to use an alpha-sympathetic blocking agent. Detrusor-external sphincter dyssynergia is not seen in Parkinson's obstruction. Thus, baclofen, which is intended to induce skeletal muscle relaxation, is not indicated. Antimuscarinics may reduce involuntary detrusor contractions, but may exacerbate emptying failure, so should not be used until his emptying improves. TURP in Parkinson's patients carries with it a risk of urinary incontinence and should be utilized only in patients with definite bladder outlet obstruction due to BPH who have failed more conservative therapy. A trial of alpha-blocker is warranted prior to initiation of CIC or a TURP.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, pp 1767-1768.

Question #74

ANSWER=B

This patient is found to have stress urinary incontinence on exam. She has no prolapse on POP-Q testing. She has no other medical problems, and there is no reason to suspect an abnormal flow or elevated residual (which might be suspected with prolapse or prior pelvic surgery); therefore, further testing with urodynamics, particularly prior to starting non-invasive therapy, is unnecessary. Since she can contract her pelvic muscles on exam, biofeedback may not be required and she should be started on a program of pelvic floor exercises. Mid-urethral sling may be offered to patients failing conservative management.

Newman DK, Burgio KL: Conservative management of urinary incontinence: Behavioral and pelvic floor therapy and urethral and pelvic devices, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 80, p 1883.

Question #75

ANSWER=A

The only recommended test prior to surgery, beyond those already mentioned, is a urinalysis. A positive urinalysis may trigger other testing. PSA was normal within the last year and need not be repeated. Cystoscopy, uroflowmetry, and postvoid residual testing are all optional. Cystoscopy may be appropriate if the size of the prostate is in doubt, particularly if it may be too large for endoscopic management. Uroflowmetry, although not specific, may be a reasonable indicator of bladder outlet obstruction. Pressure flow testing is the best assessment for outlet obstruction, but is costly, invasive, and not recommended routinely unless the diagnosis is in doubt (for example, younger men with small prostates and severe LUTS, or if there is concern for neurogenic detrusor dysfunction).

Welliver C, McVary KT: Minimally invasive and endoscopic management of benign prostatic hyperplasia, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 105, p 2509.

Question #76

ANSWER=E

Nerve-sparing RPLND can be performed for stage 1 disease. Normally, the post-ganglionic sympathetic fibers are identified below the renal vessels and are dissected out of the lymphatic tissue during a nerve-sparing RPLND. Regardless of the side of the dissection, great care is taken during dissection over the aortic bifurcation, as this is the site where the hypogastric plexus crosses anterior to the great vessels. This is the area where the sympathetic nerves are most vulnerable to injury, and this is why the aortic bifurcation is not included in the modified RPLND template.

Rice KR, Cary CK, Masterson TA, Foster RS: Surgery of testicular tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 35, p 821.

Question #77

ANSWER=A

If the patient is asymptomatic, no immediate treatment is necessary. There is evidence that a 24-hour urine collection will be normal as the stone is most likely secondary to urinary stasis. SWL, ureteroscopic, and percutaneous approaches are not necessary unless the patient becomes symptomatic. Indications for intervention would include pain and recurrent UTIs. In this case, if he was symptomatic, both ureteroscopic and laparoscopic approaches would be reasonable for a caliceal diverticulum in an anterior location.

Leavitt DA, de la Rosette JJMCH, Hoenig DM: Strategies for nonmedical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 53, p 1243.

Question #78

ANSWER=A

Most traumatic arterio-venous (AV) fistulas of the kidney, such as those caused by percutaneous biopsy, are asymptomatic, small, and will close spontaneously without intervention. Symptomatic fistulas can cause poorly controlled hypertension, persistent hematuria, or high-output heart failure. Symptomatic AV fistulas can be managed by embolization, operative ligation of the feeding vessels, or partial/complete nephrectomy depending upon their size and location. This patient's hypertension is well-controlled with medication, and there is, therefore, no indication for intervention.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, p 2137.

Question #79

ANSWER=C

The presence of seminal vesicle invasion is the highest risk feature of this case scenario. Although bladder neck invasion is assigned to pathologic T4 status, it has not been associated with any independent increased risk of recurrence following radical prostatectomy. The pre-operative PSA and final Gleason score in this case are categorized as intermediate risk in the D'Amico classification system. In cases of down grading from Gleason 8 to Gleason 7 on final pathologic analysis, the final pathologic grade is most closely associated with risk of relapse.

Yossepowitch O, Sircar K, Scardino PT, et al: Bladder neck involvement in pathological stage pT4 radical prostatectomy specimens is not an independent prognostic factor. J UROL 2002;168:2011-2015.

Epstein JI: Pathology of prostatic neoplasia, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 110, p 2605.

Question #80

ANSWER=B

The postvoid films show missing sacral segments and abnormal lumbar vertebra. The cystogram shows a trabeculated bladder with no reflux. The voiding films show a dilated prostatic urethra, as well as, dilation of the bulbar urethra. However, there are no urethral valves, so valve ablation is not needed. Given the bony abnormalities, urodynamics, and an MRI scan of the lumbar sacral spine to rule-out a coexisting tethered spinal cord are the next diagnostic steps. Starting medications are indicated only after a baseline urodynamic study is performed. The appearance of the urethra is secondary to detrusor sphincter dyssynergia. The patient does not have a bulbar urethral stricture; therefore, a retrograde urethrogram is not indicated.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, pp 3286-3289.

Question #81 **ANSWER=A**

Small cell carcinoma of the prostate is rare but associated with a high likelihood of metastatic disease at diagnosis and poor prognosis after treatment. Radical prostatectomy is not associated with good outcomes. Small cell carcinoma of the prostate does not secrete PSA significantly, and is apparently androgen resistant. Systemic chemotherapy is thought to be the most effective strategy followed by, or concurrent with radiation therapy. Chemotherapy agents used are similar to those used in patients with other small cell carcinoma (e.g., lung) with combinations of cisplatin and etoposide or paclitaxel or docetaxel and topotecan.

Epstein JI: Pathology of prostatic neoplasia, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 110, p 2599.

Question #82 **ANSWER=D**

Patients undergoing adrenalectomy for Cushing's syndrome have an excess of corticosteroids from an adrenal adenoma or carcinoma. These patients need stress-dose steroids and careful glycemic control as they often have obesity and diabetes. Alpha-blockers and hydration are indicated peri-operatively for patients with pheochromocytoma. Beta-blockers may also be necessary pre-operatively for patients with pheochromocytoma if they are tachycardic after alpha-blockade. Potassium-sparing diuretics are important for the peri-operative management of patients with hyperaldosteronism (Conn's disease) as they often have significant hypokalemia.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1581.

Question #83 **ANSWER=C**

The main indications for partial adrenalectomy are solitary adrenal gland, bilateral disease, and patients with familial syndromes. Pheochromocytoma has been treated with partial adrenalectomy, especially in patients with VHL, familial pheochromocytoma, or multiple endocrine neoplasia type 2a. Observation and biopsy are not appropriate for patients with pheochromocytoma. Open adrenalectomy and partial nephrectomy may be appropriate for patients with larger renal masses (> 3 cm). This patient will likely require multiple surgeries on both kidneys and adrenals, so the maximum functioning renal and adrenal tissue should be preserved.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1552.

Question #84 **ANSWER=A**

This is a typical presentation of pediatric, benign, daytime urinary frequency syndrome. The etiology of this disorder is unclear but often follows a systemic illness. Treatment is with parental reassurance, maintenance of a voiding diary and behavioral modification therapy to reward for progressive lengthening of the voiding interval. Resolution of symptoms will invariably occur within a few months. Antimuscarinic agents are rarely helpful. Imaging and urodynamic studies do not yield any significant findings. In the presence of a normal urinalysis, cystoscopic evaluation is not indicated.

Zoubek J, Bloom DA, Sedman AB: Extraordinary urinary frequency. PED 1990;85:1112-1114.

Austin PF, Vricella GJ: Functional disorders of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 143, p 3310.

Question #85 **ANSWER=C**

The corporal septum is the weakest portion of the corporal body. This is of particular importance during insertion of a penile prosthesis, as the corporal septum may be perforated and an unrecognized cylinder cross over may occur after septal perforation. This complication may be avoided by placing the penis on traction, aiming the tip of the dilator laterally, and placing a spacer in the contralateral corpora while its mate is dilated. Thus, the other locations described (dorsally, ventrally, distally, and proximally) would be incorrect.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 26, p 614.

Question #86 **ANSWER=B**

The paired calcified tubular structures in the center of the pelvis are the vas deferens. Calcification of the vas deferens is virtually pathognomonic for diabetes mellitus. Although tuberculosis can, on rare occasions, have similar findings. This patient has also had a left iliac fossa renal transplant which contains a radio-opaque urinary stone.

Adam A, Dixon AK, Gillard JH, et al: Male genitourinary tract, in Adam A, Dixon AK, Gillard JH, et al (eds): GRAINGER AND ALLISON'S DIAGNOSTIC RADIOLOGY, ed 6. London, Churchill Livingstone, 2014, chap 40, p 944.

Question #87 **ANSWER=B**

The most common cause of hypomagnesuria is inflammatory bowel disease, and an appropriate referral to a gastroenterologist to rule-out this disorder should be performed. The benefit of oral magnesium supplementation in the management of hypomagnesuric calcium nephrolithiasis has not been well-established. Though tofu and brown rice are rich in magnesium, the impact of dietary intervention on hypomagnesuria has not been tested. Though increased fluid intake is an empiric measure to decrease the risk of stone formation, it will not address this specific metabolic abnormality. Allopurinol does not impact urinary magnesium levels.

Lipkin ME, Ferrandino MN, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 52, p 1228.

Question #88 **ANSWER=C**

This is a common clinical scenario. Newborns are relatively oliguric for the first 48 hours of life primarily due to neonatal decreased renal blood flow and low glomerular filtration rates of the immature neonatal kidney. The normal neonatal renal physiology is associated with diminished urine production and may lead to either an underestimation of the severity of hydronephrosis and/or to the presence of a "normal" renal ultrasound shortly following birth. For this reason, it is always recommended that the child with mild to moderate antenatal hydronephrosis have a follow-up neonatal ultrasound two to six weeks following birth. There has been some debate about whether such patients also deserve a VCUG to rule-out vesicoureteral reflux. The 2010 AUA Guideline on reflux management, however, does not recommend a VCUG in patients with mild to moderate antenatal hydronephrosis unless the postnatal ultrasound reveals a dilated ureter or the presence of coexisting renal anomalies that would suggest the possibility of reflux. Serum creatinine is unlikely to be helpful in cases of mild hydronephrosis and renal scan is not indicated unless moderate or severe hydronephrosis is actually documented to be present via ultrasound.

Lee RS, Borer JG: Perinatal urology, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 124, pp 2888-2889.

Question #89 **ANSWER=E**

The management of reflux has become extremely controversial. Although there is improvement in the evidence-based literature evaluating reflux, there is still a lack of data to definitively establish the role of antibiotics and surgery in the management of low to moderate grade reflux. However, the relationship between bladder and bowel dysfunction (BBD) and reflux is now widely recognized and accepted. When present, it is the overriding factor that most affects the incidence of recurrent infections, spontaneous resolution of reflux, and successful surgical correction of reflux. When BBD is recognized to be present, it needs to be treated aggressively given its effect on both the medical and surgical management of reflux. While all of the other listed factors may impact resolution rates of reflux (age), infection (circumcision status), and susceptibility to develop renal scarring (intrarenal reflux), none of them have the impact of BBD collectively.

Peters CA, Skoog SJ, Arant BS Jr, et al: AUA GUIDELINE FOR MANAGEMENT AND SCREENING OF PRIMARY VESICOURETERAL REFLUX IN CHILDREN. American Urological Association Education and Research, Inc, 2010; 184. http://www.auanet.org/education/guidelines/vesicoureteral-reflux-a.cfm

Khoury AE, Bägli DJ: Vesicoureteral reflux, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 137, p 3134.

Question #90 **ANSWER=A**

The AUA Best Practice Statement on urologic surgery antimicrobial prophylaxis states that antimicrobial prophylaxis is not indicated prior to urodynamic testing, unless specific risk factors exist. These risk factors include: advanced age, anatomic abnormalities of the urinary tract, poor nutritional status, and immunodeficiency. Furthermore, the American Heart Association does not recommend the use of antimicrobial prophylaxis prior to any urologic procedure, solely for the prevention of infectious endocarditis. Therefore, this patient does not require antimicrobial prophylaxis prior to undergoing urodynamic testing.

Wolf JS Jr, Bennett CJ, Dmochowski RR, et al: BEST PRACTICE POLICY STATEMENT ON UROLOGICAL SURGERY ANTIMICROBIAL PROPHYLAXIS. American Urological Association Education and Research, Inc, 2008. (Updated January 2014)
http://www.auanet.org/education/guidelines/antimicrobial-prophylaxis.cfm

Question #91 **ANSWER=B**

The most potent stimulator of aldosterone secretion is angiotensin II. The juxtaglomerular apparatus is sensitive to renal perfusion. Decreased perfusion stimulates renin secretion which is converted in the lungs to angiotensin II and stimulates the secretion of aldosterone. Aldosterone secretion is also under the influence of both ACTH and potassium, but they are secondary influences. Sodium has no direct influence other than through volume expansion and contraction.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1530.

Question #92 **ANSWER=E**

This patient presents with a complex case of recurrent stress urinary incontinence (SUI) in spite of previous treatment, a fixed urethra, and a low Valsalva LPP. The only reasonable option presented would be an autologous sling. Pelvic floor exercises would be unlikely to successfully address her symptoms. Imipramine can be considered for off-label utilization for mixed incontinence, but is also unlikely to cure this degree of SUI. Sacral neuromodulation is primarily indicated for urinary urgency, and/or urge incontinence, and is not indicated for the treatment of stress incontinence. Of the two sling options presented, the autologous pubovaginal sling is the better option for recurrent intrinsic sphincter deficiency, particularly in the face of a fixed urethra.

Dmochowski RR, Osborn DJ, Reynolds WS: Slings: Autologous, biologic, synthetic, and midurethral, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 84, pp 2020-2021.

Question #93

ANSWER=B

Radiographic assessment for possible genitourinary trauma is required for all symptomatic pediatric patients that have sustained blunt trauma with microscopic hematuria. A normal Focused Assessment with Sonography for Trauma (FAST) exam and serial physical exams for 24 hours will nearly rule-out all significant renal injuries and spare the patient radiation. CT scan with delayed views is recommended if the FAST exam is abnormal or gross hematuria is present. MRI scan is not indicated in the evaluation of trauma.

Husmann DA: Pediatric genitourinary trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 154, pp 3538-3539.

Question #94

ANSWER=B

Patients with distal or type 1 RTA have a basic defect in eliminating H+ from the distal tubule. Associated urinary changes include both an increase in calcium and a distinct decrease in citrate levels. This combination results in most type 1 patients forming renal calculi. In distinction, type 2 RTA is caused by diminished bicarbonate reabsorption in the proximal tubule. While this defect also results in high urinary calcium levels for reasons that are not fully understood, it does not lower urinary citrate, and thus, these patients do not commonly form renal calculi. Sodium and phosphate handling are altered in both forms of RTA but do not seem to have much impact on stone formation. In patients with type 1 RTA, the administration of potassium citrate is the mainstay of attempting to minimize nephrocalcinosis and the formation of renal calculi.

Lipkin ME, Ferrandino MN, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 52, pp 1211-1212.

Question #95

ANSWER=E

Bladder rupture should be suspected in patients with pelvic fractures. Bladder injury may be intraperitoneal or extraperitoneal. Small extraperitoneal lacerations may be managed non-operatively with urethral catheter drainage and antibiotics. Contraindications to conservative management include gross hematuria with repetitive clot retention, concomitant rectal or vaginal injury, bladder neck injury, the presence of a foreign body in the bladder (such as a piece of bone or a bullet), or injury due to a gunshot. This patient has clot retention, and, therefore, should be managed by surgical repair. The injury should be approached by an intraperitoneal approach in those with pelvic hematomas. Entering the hematoma through an extraperitoneal approach risks release of a contained pelvic hematoma and significant hemorrhage. Continuous bladder irrigation is contraindicated in the presence of a bladder rupture since the fluid will extravasate, increasing the risk of pelvic abscess and pelvic osteomyelitis. The placement of a percutaneous suprapubic tube will not correct the injury and may be difficult and risky in the presence of a pelvic hematoma. Cystoscopy with clot evacuation will not correct the injury.

Morey AM, Brandes S, Dugi III DD, et al: UROTRAUMA: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014. http://www.auanet.org/education/guidelines/urotrauma.cfm

Question #96

ANSWER=A

Fish oil is an effective, first-line therapy for mild-moderate hypercalciuria. Fish oils are rich in n-3 fatty acids, more specifically eicosapentaenoic acid (EPA), which undergoes the same pathway of eicosanoid metabolism as the n-6 fatty acids found more commonly in Western diets. EPA is an essential dietary fatty acid as humans are unable to synthesize it from its precursor fatty acid, linoleic acid. EPA is found mainly in such cold-water seafood as salmon, mackerel, tuna, herring, sardines, bluefish, trout, whitefish, and striped bass. Fish oils are sold in pill and liquid form as a source of n-3 fatty acids. EPA is thought to have a protective role in preventing nephrolithiasis by decreasing urinary calcium and oxalate excretion through alteration of prostaglandin metabolism. EPA competes with arachidonic acid for cyclooxygenase, resulting in the formation of less PGE2. When PGE2 is inhibited, urinary calcium excretion is reduced. Decreased PGE2 also leads to an activation of the nephron Na/K/2Ca transporter, which results in increased renal calcium reabsorption. Greenland Eskimos, a population which has an extraordinarily low incidence of renal stone disease, consume approximately 5 to 10 gm of n-3 fatty acids daily. Most human clinical trials using fish oils have given 1200-1800 mg daily to their subjects. None of the other vitamins or supplements listed have any impact on calcium metabolism.

Pearle MS, Goldfarb DS, Assimos DG, et al: MEDICAL MANAGEMENT OF KIDNEY STONES: AUA GUIDELINE: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014. http://www.auanet.org/education/guidelines/management-kidney-stones.cfm

Question #97

ANSWER=A

A prostatic utricle is present in 10-15% of boys with a proximal hypospadias, and is the most common cause of difficulty in catheterizing the bladder with proximal hypospadias. The embryologic origin of the utricle is the paramesonephric duct or Müllerian duct. Remnants of the mesonephric duct give rise to Gartner's cyst, whereas, the mesonephric duct gives rise to the vas deferens and seminal vesicle. The urorectal septum divides the common cloaca into the hindgut and urogenital sinus. The urethral plate gives rise to the urethra and prostate from the urogenital sinus. A narrow urethral plate does not cause difficulty with catheterization.

Park JM: Embryology of the genitourinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 122, p 2839.

Question #98

ANSWER=A

Adrenal incidentalomas are unsuspected adrenal masses > 1 cm in diameter identified on imaging performed for seemingly unrelated causes. Ultrasound is a suboptimal imaging modality for detecting and fully characterizing adrenal lesions. Nevertheless, many incidentalomas will be discovered on ultrasound imaging performed for unrelated reasons. An unenhanced CT scan is the first, and perhaps single best, and most easily interpreted test for intracellular lipid, and can diagnose an adrenal adenoma in more than 70% of cases. Low attenuation (< 10 Hounsfield units (HU)) on unenhanced CT scan corresponds to high intracytoplasmic lipid content, and is diagnostic for an adrenal adenoma. Ninety-eight percent (98%) of lesions with an attenuation of 10 HU or less on non-contrast CT scan are adrenal adenomas, while less than 30% of adrenal adenomas are lipid-poor (also known as, atypical adenomas) and have an attenuation of > 10 HU. If a lesion demonstrates an attenuation of >10 HU, then additional radiological evaluation can be performed, including CT washout study to help discriminate lipid-poor adenomas from other adrenal lesions. Gadolinium-enhanced MR washout studies do not exhibit the diagnostic strength of iodine-based CT washout studies, and are not commonly employed. When MRI scan is used, opposed phase chemical-shift MR imaging to evaluate for intracellular lipid content can help distinguish an adenoma from other adrenal lesions. Functional studies such as PET imaging and an MIBG scan (used to evaluate for pheochromocytomas) are not indicated in the initial evaluation of an adrenal incidentaloma.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1557.

Question #99

ANSWER=D

Hematuria is one of the most common genitourinary abnormalities in children. An association with hypercalciuria and hematuria in children is well-documented. Calcium excretion exceeding 4 mg/kg is considered abnormal. In children, the collection of 24-hour urine can be difficult. A spot urine calcium:creatinine ratio can be used for screening, but hypercalciuria must be confirmed with a 24-hour urine calcium. A fasting level > 0.21 or a post-prandial level > 0.28 are abnormal. It is unclear how the hematuria is produced by the hypercalciuria. However, these children are at risk for subsequent urolithiasis which has been reported in over ten percent of individuals. The imaging evaluation should include a renal ultrasound to exclude both calculi and structural abnormalities. Further imaging studies are not warranted. C3 and ASO titers are unwarranted, as this child has no red cell casts or proteinuria. The yield of cystoscopy in this pediatric population is very low. Evaluation for renal inflammatory disease or parenchymal abnormality by biopsy or contrast imaging is very low in the absence of significant proteinuria.

Norwood VF, Peters CA: Disorders of renal functional development in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 123, pp 2852-2854.

Garcia D, Miller L, Stapleton FB: Natural history of hematuria associated with hypercalciuria in childhood: AJDC 1991;145:1204-1207.

Question #100

ANSWER=D

This case exemplifies the classic one-kidney, one-clip animal model of renovascular hypertension and is similar to the findings of the two-kidney, two clip animal model of renovascular hypertension. In these models, during the acute phase of obstruction, there is an increase in renin release and activation of the renin-angiotensin-aldosterone system (RAAS) by the ischemic kidney(s) resulting in hypertension. With the absence of a contralateral kidney, or if both kidneys are involved, contralateral natriuresis by the unaffected kidney will not occur. Consequentially, the stenotic kidney begins to conserve sodium and fluid, resulting in volume expansion and an elevated renin (transitional phase). In the chronic phase, the elevated blood pressure, excess sodium retention, and volume expansion all act as negative feedback mechanisms for suppression of renin release resulting in volume-expanded hypertension with normal renin-angiotensin-II levels. These patients do not respond well to ACE inhibitors or angiotensin-II antagonists unless concurrent sodium restriction is prescribed. In contrast, the two-kidney, one-clip model is characterized by unilateral release of renin from the ischemic kidney accompanied by contralateral suppression of renin from the normal kidney and natriuresis. Consequently, there is sodium retention from the ischemic kidney and excretion from the contralateral kidney. This results in euvolemia and hypertension dependent upon angiotensin-II vasoconstriction. Medical management of these patients is directed at the renin-angiotensin system (i.e., ACE inhibitors and angiotensin-II antagonists) with or without sodium restriction based on the type of renal hypertension model.

Gulmi FA, Reiser IW, Spitalewitz S: Renovascular hypertension and ischemic nephropathy, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 45, p 1029.

Question #101 **ANSWER=A**

Pre-pubertal (in distinction to post-pubertal) mature teratoma of the testis have a benign clinical course. AFP levels are initially elevated in newborns and decline during the first year of life, therefore, in this patient, the AFP elevation does not indicate yolk sac elements. Treatment is partial orchiectomy after confirmation of the frozen section. Orchiectomy and further treatment, such as, chemotherapy, radiation, or RPLND are reserved for malignant tumors such as yolk sac. Serial ultrasounds are not necessary in pre-pubertal patients with teratoma.

Ferrer FA: Pediatric urologic oncology: Bladder and testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 156, pp 3593-3596.

Question #102 **ANSWER=C**

In a febrile but clinically stable patient, endoscopic incision has the advantage of both draining the system and the possibility that it could be a definitive treatment. The best management is cystoscopic incision of the ureterocele in order to promptly and fully drain the infected urine from the ureterocele. Endoscopic incision of the ureterocele with subsequent decompression of the upper tract would obviate the need for stent placement. Percutaneous nephrostomy placement can be of benefit in a clinically labile patient where general anesthesia for endoscopic incision of the ureterocele would be hazardous. Definitive management may require an open approach including ureterocele excision and ureteral reimplantation. However, that would not be recommended at present in this acute setting.

Peters CA, Mendelsohn C: Ectopic ureter, ureterocele, and ureteral anomalies, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 134, pp 3080-3086.

Question #103 **ANSWER=C**

She has small bowel herniation which is compressing her ileal loop, resulting in outlet obstruction at the fascial level. Stomal stenosis can present similarly, but without CT scan findings of a hernia. Lymphoid depletion does result in late-onset loop strictures but these are generally mid-loop. Stomal prolapse does not result in obstruction. Intestinal volvulus could result in obstruction of the loop, but again, the principal finding on the CT scan is the hernia.

Dahl DM: Use of intestinal segments in urinary diversion, Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier Saunders, 2015, vol 3, chap 97, pp 2290-2292.

Question #104 **ANSWER=A**

During microsurgical reconstruction of the amputated penis, the urethra is reapproximated, the two dorsal arteries, the deep dorsal vein, and as many nerve fascicles as possible, are anastomosed. The cavernosal arteries are typically not reconstructed as they are difficult to access and the dorsal arteries provide adequate circulation.

Jordan GH: Lower genitourinary tract trauma and male external genital trauma (nonpenetrating injuries, penetrating injuries, and avulsion injuries) Part II. AUA UPDATE SERIES, 2000, vol 19, lesson 11.

Morey AF, Zhao LC: Genital and lower urinary tract trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 101, pp 2381-2382.

Question #105 **ANSWER=A**

This patient has a T2 squamous cell carcinoma of the distal urethra with negative margins. Assuming that his cystoscopy is normal and there are no other signs of disease, the proper management is observation. Total penectomy is not advocated in the setting of negative margins. Currently, there is no data that prophylactic inguinal node dissection provides any benefit. Adjuvant chemotherapy is not indicated for T2 disease. Radical penectomy with cystoprostatectomy is also not indicated with the finding of negative margins and no evidence of disease in the bladder.

Sharp DS, Angermeier KW: Tumors of the urethra, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 38, pp 881-883.

Question #106 **ANSWER=D**

Blood pressure control has been identified as one of several measures to help prevent progression of chronic kidney disease (CKD). Others include: lifestyle modification, glycemic control, reduction of proteinuria, protein restriction, lipid control, correction of anemia, correction of acidosis, and maintenance of fluid balance. Angiotensin II is thought to be central to the progression of CKD via both hemodynamic and non-hemodynamic mechanisms. ACE inhibitors can reduce glomerular pressure as well as proteinuria, which has a sentinel role in renal scarring. In addition, ACE inhibitors appear to improve interstitial capillary pO2 levels, thus decreasing renal sclerosis risk. All other therapies, including calcium channel blockers (e.g., amlodipine), beta-blockers (e.g., atenolol), alpha-agonists (e.g., clonidine), and diuretics (e.g., hydrochlorothiazide) do not provide as much reno-protection as ACE inhibitors or angiotensin receptor blockers (e.g., losartan).

Goldfarb DA, Poggio ED, Demirjian S: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 46, pp 1062-1063.

Question #107

ANSWER=C

According to the American Society of Gastroenterology, diarrhea, with a positive test for clostridium difficile with significant volume loss and electrolyte abnormalities, is defined as severe and/or complicated infection. I.V. fluid resuscitation, electrolyte replacement, and pharmacological DVT prophylaxis is recommended. In the absence of ileus or significant abdominal distention, oral or enteral feeding should be given. CT scan of the abdomen and pelvis is recommended. Vancomycin, orally or via the enteral tube at 125 mg PO four times daily plus metronidazole 500 mg I.V. three times daily, is strongly recommended in the guidelines. Oral metronidazole is recommended for mild to moderate infection and considered under treatment for severe cases. Single agent treatment with vancomycin alone is also considered under-treatment. Rectal vancomycin and/or metronidazole is reserved for severe infection with ileus, abdominal distention, or toxic colon.

Surawicz CM, Brandt LJ, Binion DG, et al: Guidelines for diagnosis, treatment, and prevention of Clostridium difficile infections. AM GASTROENTEROL 2013;108:478-498.

Question #108

ANSWER=B

The determination of stress urinary incontinence (SUI) secondary to sphincter deficiency should be performed at bladder volumes of 200 mL or greater, and require that the patient reaches Valsalva intra-abdominal pressures of greater than or equal to 60 cm H_2O. Failure to reach these intra-abdominal pressures or bladder volumes during the performance of a videourodynamic study are two of the main reasons for a false negative test for sphincteric incontinence. In the presence of a urodynamic study reaching adequate bladder volumes and adequate Valsalva pressures, the next most common cause for a videourodynamic to fail to diagnose sphincteric incontinence is the presence of an indwelling catheter during the time of urodynamic study. An indwelling catheter may prevent demonstration of SUI at the time of testing by causing a physical obstruction of a coexisting bladder neck contraction, or alternatively, by causing spasm of the urethral sphincter related to catheterization. In these situations, the urethral catheter should be removed while at maximum bladder capacity and a Valsalva maneuver performed. Leakage can be confirmed by the concurrent use of video portion of the study. If no leakage is found, the patient should be requested to void and confirmation of complete bladder emptying noted, to rule-out the possibility of coexisting impaired detrusor contractility and overflow incontinence. Alternatively, a simple postvoid ultrasound residual could have been performed as part of the initial evaluation in a patient with post-prostatectomy urinary incontinence to rule-out this possibility. The use of straining, tapping, and Crede maneuvers are classically used in a patient with an underactive bladder in an attempt to elicit a detrusor contraction when the patient is unable to void on request. Valsalva intraabdominal pressures of 100 cm or higher are required to evaluate for hypermobility of the bladder neck in women complaining of stress urinary incontinence.

Dector RM, Harpster L: Pitfalls in leak point pressure determination. J UROL 1992;149:588-591.

Maniam P, Goldman HB: Removal of transurethral catheter during urodynamics may unmask stress urinary incontinence. J UROL 2002;167:2080-2082.

Nitti VW, Brucker BM: Urodynamic and video-urodynamic evaluation of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 73, p 1727.

Question #109 **ANSWER=D**

Patients with an oncocytoma, or small renal tumors with indeterminate histology, should be followed with the same imaging protocols used for untreated, low risk (cT1, N0, Nx) renal cancer patients. This recommendation for benign tumor follow-up is based on two concerns: 1) benign tumors can exhibit substantial growth patterns over time that may threaten destruction of the renal unit by compression/invasion of surrounding parenchyma and vascular structures; 2) although the accuracy of percutaneous biopsy has improved substantially in the past several years, the pathologic differentiation between oncocytoma and oncocytic neoplasms (e.g., chromophobe renal cell carcinoma) and renal cell carcinoma can at times be difficult, with the true pathology of the mass only coming to attention by rapid tumor growth. The purpose of routine imaging of these benign neoplasms is, therefore, to capture undue tumor growth and allowing for expedient surgical/ablative intervention and avoidance of radical nephrectomy. AUA Guidelines for the follow-up of renal cancers and untreated low-risk tumors, including oncocytoma, include: 1) history and physical examination; 2) basic laboratory testing to include blood urea nitrogen (BUN)/creatinine, urine analysis (UA), and estimated glomerular filtration rate (eGFR); 3) continued renal imaging (US, CT or MRI scan) at least annually, and annual chest X-ray (CXR) to assess for pulmonary metastases. Repeat biopsy is not indicated or warranted for the routine follow-up of such patients, as therapeutic intervention is based on subsequent neoplasm growth rate.

Donat SM, Chang SS, Bishoff JT, et al: FOLLOW-UP FOR CLINICALLY LOCALIZED RENAL NEOPLASMS: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2013. http://www.auanet.org/education/guidelines/renal-cancer-follow-up.cfm

Question #110 **ANSWER=C**

Spontaneous bladder perforation following enteric bladder augmentation occurs in 8 to 10% of cases, most commonly presenting with signs of peritonitis and acute abdomen. It can be life-threatening, especially in the neuropathic population, as often their neurologic deficit causes atypical presenting symptoms and sepsis can occur rapidly. Late perforations most often occur in the bowel segment, approximately 1 cm from the anastomotic line. A standard cystogram has a high false negative rate, and a CT cystogram is recommended in patients with abdominal symptoms suggestive of bladder rupture. While most perforations are managed with laparotomy and primary closure, conservative treatment with catheter drainage has been reported successful in very selected cases, usually with contained, late perforations in patients without VP shunts. Endoscopy is not diagnostic for perforation, and can lead to worsening dissemination of infected urine in the abdomen. Shunt externalization is often required due to peritonitis and contamination of the abdominal shunt catheter, but shunt series is not necessary.

Adams MC, Joseph DB, Thomas JC: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 145, p 3354.

Question #111

ANSWER=C

These symptoms are likely related to the sling being too tight leading to her de novo symptoms. The best option at this time would be to initiate CIC to allow for adequate emptying and minimization of symptoms. Alpha-blockers would not impact this anatomic obstruction. Urethral dilation is likely to be ineffective. Fascial slings tend to loosen up over time, and with the use of CIC, her residuals can be continually monitored for possible improvement. Sling loosening would not likely be effective. Sling incision should be considered if these symptoms do not improve with time. The optimal time for sling incision post-sling placement is not known, though many authors advocate waiting three to four months after the sling has been placed. This is certainly different than how obstruction is managed after mid-urethral sling, with many considering sling incision within the first month after sling placement.

Dmochowski RR, Osborn DJ, Reynolds WS: Slings: Autologous, biologic, synthetic, and midurethral, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 84, p 2005.

Question #112

ANSWER=A

This patient has had an adrenal hemorrhage and displays the classic triad of mass, anemia, and jaundice (secondary to blood absorption from the retroperitoneum). Males can present with scrotal hemorrhage. Ultrasound is the best way to confirm the diagnosis, and after excluding neuroblastoma, is an ideal follow-up tool. CT scanning often requires heavy sedation or anesthesia in the very young child. Biopsy and surgery are not required. Spontaneous complete resolution will usually occur within months.

Lee RS, Borer JG: Perinatal urology, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 124, p 2886.

Question #113

ANSWER=A

Roughly 74% of men who take chronic opioids will have low testosterone. Opioids have been shown to have an inhibitory effect on gonadotropin-releasing hormone secretion in the hypothalamus, thus, to decrease gonadotropin production and testosterone production. Weaning opioids may result in an increase in serum testosterone levels. Because this couple wants to have children in the future, exogenous testosterone with gels and injections should not be used as this can impair semen parameters. The likely cause of this patient's erectile dysfunction (ED) is his low testosterone, thus, sex therapy will probably not solve his ED problem. Urethral alprostadil suppositories should not be used during unprotected intercourse with a pregnant partner, as this may induce uterine contractions, and should not be used in couples trying to achieve pregnancy.

Burnett AL II: Evaluation and management of erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 27, pp 659-660.

Daniell HW, Lentz R, Mazer NA: Open-label pilot study of testosterone patch therapy in men with opioid-induced androgen deficiency. J PAIN 2006;7:200.

Kalyani RR, Gavini S, Dobs AS: Male hypogonadism in systemic disease. ENDOCRINOL METAB CLIN N AM 2007;36:333.

Question #114 **ANSWER=E**

Delayed bleeding following percutaneous nephrolithotomy indicates the presence of an arteriovenous fistula or arterial pseudo aneurysm. New onset bright red blood favors an arterial pseudo aneurysm. The next best step is selective angioembolization. The pseudo aneurysm is at risk to bleed, so bed rest is not appropriate in this scenario. A nephrostomy tamponade catheter and/or fulguration is most effective for immediate bleeding following the nephrolithotomy procedure. Renal exploration is reserved for recalcitrant bleeding if angioembolization fails or life threatening bleeding ensues.

Wolf JS Jr: Percutaneous approaches to the upper urinary tract collecting system, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 8, p 153.

Question #115 **ANSWER=D**

This woman has an uncomplicated UTI. Urine culture is not necessary when symptoms are present, she has no risk factors for a complicated UTI, and urinalysis reveals pyuria and/or bacteriuria. Trimethoprim/sulfamethoxazole is the best empirical agent for uncomplicated UTI in women. Quinolones should be reserved for cases of recurrent UTI or a history of trimethoprim/sulfamethoxazole resistance. Three day therapy is the preferred treatment regimen for uncomplicated cystitis in women. Single dose therapy has a high rate of recurrence.

Schaeffer AJ, Matulewicz RS, Klumpp DJ: Infections of the urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 12, pp 266-268.

Question #116 **ANSWER=A**

According to the AUA Guidelines on overactive bladder (OAB), a therapeutic trial of therapy is a minimum of four to eight weeks for pharmacologic therapy and eight to twelve weeks for behavioral therapy. This patient has only been treated for two weeks, and further improvement may be seen with her present management plan. A change in oral therapy (solifenacin or mirabegron) should be considered only after she has failed an adequate trial length of her present therapy. Failure is defined as lack of improvement after four to eight weeks of pharmacologic therapy and/or the development of intolerable pharmacologic side effects. OnabotulinumtoxinA is indicated for patients that have failed oral pharmacologic therapy. In the routine evaluation of the OAB patient, cystoscopy is not indicated unless the screening urinalysis is abnormal.

Gormley EA, Lightner DJ, Burgio KL, et al: DIAGNOSIS AND TREATMENT OF OVERACTIVE BLADDER (NON-NEUROGENIC) IN ADULTS: AUA/SUFU GUIDELINE. American Urological Association Education and Research, Inc, 2012|Amended 2014.
http://www.auanet.org/education/guidelines/overactive-bladder.cfm

Question #117 **ANSWER=C**

Recent studies on post-prostate biopsy sepsis have noted significant resistance to fluoroquinolones (90%), piperacillin (72%), trimethoprim/sulfamethoxazole (44%), and even gentamicin (22%). However, minimal to no bacterial resistance is noted to the carbapenems (imipenem and meropenem) and amikacin. In addition, the oral second (Cefuroxime, Cefaclor) and third-generation cephalosporins (Cefixime, Cefdinir) maintain a good bacterial sensitivity pattern.

Gonzalez C M, Averch T, Boyd LA, et al: AUA/SUNA WHITE PAPER ON THE INCIDENCE, PREVENTION AND TREATMENT OF COMPLICATIONS RELATED TO PROSTATE NEEDLE BIOPSY. American Urological Association Education and Research, Inc, 2012.
http://www.auanet.org/common/pdf/education/clinical-guidance/AUA-SUNA-PNB-White-Paper.pdf

Question #118 **ANSWER=A**

The low plateau-shaped curve and elevated PVR are indicative of bladder outlet obstruction, and the increased pelvic floor activity suggests uncoordinated detrusor-pelvic floor function during voiding. The absence of other neurologic signs or symptoms, high volume incontinence, or high PVR would make neurogenic bladder less likely. VCUG is not necessary in the absence of febrile UTIs to rule-out reflux, although imaging of the outlet can show sphincteric dysfunction during voiding. Antimuscarinics are contraindicated in the setting of elevated PVR without CIC. The PVR volume is not of a sufficient volume to warrant CIC, and CIC is unnecessarily invasive. Biofeedback has been shown to normalize micturition pattern to improve emptying, incontinence, and frequency of UTI. OnabotulinumtoxinA injection in the external sphincter can be used in refractory cases but is not approved for use in the sphincter or in children. Alpha-blocking agents have been shown to be effective but do not offer the potential of a long-term cure.

Austin PF, Vricella GJ: Functional disorders of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 143, p 3307.

Question #119

ANSWER=C

Hand-assisted laparoscopic radical nephrectomy is comparable to conventional laparoscopic techniques by all measures of peri-operative and oncologic outcomes except for higher wound complications, such as hernias and infections at the hand-port site. The published incidence of these complications with hand-assisted nephrectomy is approximately 4-9%.

Schwartz MJ, Rais-Bahrami S, Kavoussi LR: Laparoscopic and robotic surgery of the kidney, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 61, p 1468.

Ordon M, Eichel L, Landman J: Fundamentals of laparoscopic and robotic urologic surgery, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 10, p 223.

Question #120

ANSWER=D

The patient presents with muscle-invasive bladder cancer (cT2) with a notable history of renal insufficiency and advanced age. Nevertheless, he remains a candidate for radical cystectomy and this should be the primary recommendation. Comorbidities, not age, should be used when deciding on radical cystectomy, and surgery can and should be considered for this patient as multiple series have demonstrated benefits of radical cystectomy in elderly patients with invasive disease. Multifocal CIS is a contraindication for chemoradiation therapy alone. Neoadjuvant chemotherapy is intended for patients with operable clinical stage T2 to T4a muscle-invasive disease. Although the data available supports the use of either M-VAC (Methotrexate, Vinblastine, Adriamycin, and Cisplatin) or CMV (Cisplatin, Methotrexate, and Vinblastine) as neoadjuvant chemotherapy, it has been estimated that more than 50% of patients are ineligible for cisplatin based chemotherapy because of impaired renal function or medical comorbidities. This patient has impaired renal function that will preclude the use of cisplatin-based neoadjuvant chemotherapy. In patients with compromised renal function, carboplatin + gemcitabine has been utilized. However, the efficacy of carboplatin-based regimens in the neoadjuvant setting is unproven and may contribute to a delay in definitive surgery without a known oncologic benefit. Adjuvant chemotherapy has been advocated for high-risk patients (pT3-4, N+ patients) in an effort to delay recurrence and prolong survival. Unfortunately, the question of the true benefit of adjuvant chemotherapy in high-risk patients with pT3, pT4, and N+ disease is currently unknown. Although this patient may be a candidate for adjuvant chemotherapy, the decision to pursue such an approach will depend on his pathologic staging, and is, therefore, not a foregone conclusion.

Guzzo TJ, Vaughn DJ: Management of metastatic and invasive bladder cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 94, p 2230.

Wosnitzer MS1, Hruby GW, Murphy AM, et al: A comparison of the outcomes of neoadjuvant and adjuvant chemotherapy for clinical T2-T4aN0-N2M0 bladder cancer. CANCER 2012;118:358-364.

Question #121

ANSWER=A

Clinicians should offer allopurinol to patients with recurrent calcium oxalate stones who have hyperuricosuria and normal urinary calcium. A prospective randomized, controlled trial demonstrated that allopurinol reduced the risk of recurrent calcium oxalate stones in the setting of hyperuricosuria (urinary uric acid excretion > 800 mg/day) and normocalciuria. Whether the drug is effective in patients with hypercalciuria has not been established. Hyperuricemia is not a required criterion for allopurinol therapy. In addition to medication, limiting non-dairy animal protein may maximize the efficacy of allopurinol. Chlorthalidone and hydrochlorothiazide would be indicated in the setting of hypercalciuria. Potassium citrate is indicated for hypocitraturia, which is not present either. Triamterene, although it is a potassium-sparing diuretic, should be avoided as stones of this compound have been reported.

Pearle MS, Goldfarb DS, Assimos DG, et al: MEDICAL MANAGEMENT OF KIDNEY STONES: AUA GUIDELINE: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014. http://www.auanet.org/education/guidelines/management-kidney-stones.cfm

Question #122

ANSWER=E

Everolimus (RAD001) is an orally administered inhibitor of mTOR. In the RECORD 1 trial which compared everolimus to placebo in a phase 3 prospective randomized trial of patients who received previous targeted therapy, progression-free survival was improved in the everolimus-treated patients (4.0 vs. 1.9 months). As such, treatment with everolimus is a category 1 recommendation after tyrosine kinase inhibitor therapy according to the NCCN Kidney Cancer panel. Axitinib is also a category 1 recommendation for this group of patients. A variety of other studies have evaluated the use of temsirolimus, bevacizumab, and sorafenib in the setting of failure after initial therapy and each of these agents have shown some effect. However, given the limited outcomes, these agents are given a category 2A recommendation in the recurrence. The NCCN guideline panel considers pazopanib a category 3 recommendation because no data exists for this drug in this setting.

Motzer RJ, Jonasch E, Agarwal N, et al: NCCN clinical practice guidelines in oncology: Kidney cancer (version 1.2015) http://www.nccn.org/professionals/physician_gls/pdf/kidney.pdf (accessed 10/21/2014)

Srinivasan R, Linehan WM: Treatment of advanced renal cell carcinoma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 63, pp 1515-1516.

Question #123

ANSWER=A

There are several appropriate analyses in the setting of a trial with a binary variable. Fisher's exact test should be used when the expected number of subjects in any subgroup is below five. Chi-square test is also appropriate when the dependent variable is measured as a binary variable, and any of the expected sample size of subjects per subgroup is five or greater. ANOVA is used to compare more than two groups. Logistic regression would be the appropriate test if there was an additional independent variable. The Pearson correlation coefficient is the appropriate test when assessing the relationship between two variables.

AUAUniversity Core Curriculum: Statistics. American Urological Association website. https://www.auanet.org/university/core_topic.cfm?coreID=122 Updated May 14, 2014.

Question #124 **ANSWER=C**

Abiraterone acetate is a specific, potent, and irreversible inhibitor of CYP17. CYP17 both facilitates the conversion of cholesterol to androstenedione and dehydroepiandrosterone (DHEA), made in the adrenal glands, and also inhibits the conversion of secondary androgens into testosterone and dihydrotestosterone. CYP17 activity can be inhibited by both ketoconazole and abiraterone acetate; however, ketoconazole competitively inhibits CYP 17. Its pharmacological effectiveness is, therefore, a reflection of the concentration of ketoconazole within the cell and are temporizing in nature. By contrast, once abiraterone acetate binds to a molecule of CYP17, the CYP17 molecule is permanently disabled. Because abiraterone effectively shuts down the effects of CYP17, it inhibits the synthesis of androgens by both the testes and the adrenal. The completeness of this blockade will lead to loss of inhibitory feedback on the pituitary gland, resulting in excess adrenal stimulation and a build-up in steroid precursors that will be diverted into alternative pathways that will eventually result in an increased production of aldosterone. The increase in mineralocorticoids leads to fluid retention and hypokalemia. To prevent this complication, low dose prednisone is administered to enhance a negative feedback on the pituitary system. Although steroids can help reduce inflammation, bone pain, nausea, and anorexia in any cancer patient, steroids are not used for this indication during treatment with abiraterone. Enzalutamide, not abiraterone, is involved in the process of nuclear translocation of the androgen receptor as part of prostate cancer anti-tumor activity. Abiraterone is not involved in cellular microtubule assembly; this is the anti-tumor mechanism of docetaxel.

Antonarakis ES, Carducci MA, Eisenberger MA: Treatment of castration-resistant prostate cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 121, pp 2811-2812.

Question #125 **ANSWER=B**

Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States and worldwide. The highest prevalence of genital HPV is found in sexually active adolescents and young adults. HPV is associated with cervical and other cancers, including: penile, anal, vulvar, vaginal, and oropharyngeal. The FDA-approved HPV vaccines have been shown to be very safe. This quadrivalent vaccine (Gardasil) contains no viral DNA and is bioengineered to contain virus-like particles produced from the major capsid protein of HPV types 16, 18, 6 and 11. There is no data to suggest that there are vaccine-specific adverse effects with the exception of rare anaphylaxis to the vaccine components. The HPV vaccines appear to be very effective, but are beneficial only if an individual has not previously been exposed to HPV. Therefore, it is recommended that the vaccine is administered before the onset of sexual activity. The duration of vaccine-induced antibodies is known to be at least five years in males and nine years in females. Clinical studies demonstrate a high degree of effectiveness in preventing genital lesions and intraepithelial neoplasia associated with HPV genotypes 6, 11, 16, and 18. The American Academy of Pediatrics recommends routine vaccination of both boys and girls who are 11-12 years of age.

American Academy of Pediatrics Policy Statement HPV Vaccine Recommendations www.pediatrics.org/cgi/doi/10.1542/peds.2011-3865 Doi:10.1542/peds.2011-3865 Pediatrics 2012

The American Congress of Obstetricians and Gynecologists Committee on Adolescent Health Care Opinion March 2014.
http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Adolescent-Health-Care/Human-Papillomavirus-Vaccination

Question #126 **ANSWER=A**

This patient has adrenal insufficiency secondary to bilateral adrenal hemorrhage. This can occur in anticoagulated patients, typically during the first three weeks of therapy. The initial therapy should be administration of I.V. fluids and glucocorticoid therapy. Fresh frozen plasma is not acutely indicated with an adequate hemoglobin level. Kayexalate will help lower a high potassium but not improve the hypotension from adrenal steroid deficiency. Chronic but not acute adrenal insufficiency is treated with fluorohydrocortisone. Vitamin K will help restore clotting factors depleted by warfarin therapy, but is not the initial therapy for this patient.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, pp 1553-1555.

Question #127 **ANSWER=C**

This patient has poor prognosis NSGCT because he has non-pulmonary visceral metastases. In that setting, the standard first line regimen is BEP times four cycles. EP times four cycles or BEP times three cycles are both appropriate first-line options for good prognosis disease, but not poor prognosis as is demonstrated here. The last two regimens, VIP (Vinblastine, Ifosfamide, and Cisplatin) and high dose chemotherapy with bone marrow rescue, can be used for salvage therapy in patients who relapse or are refractory to first-line therapy but are not standard first line regimens.

Stephenson AJ, Gilligan TD: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 34, p 802.

Question #128 **ANSWER=A**

This patient has calciphylaxis, an obliterative small vessel vasculopathy that causes skin necrosis and ulceration. Calciphylaxis predominantly affects patients with chronic kidney disease; obesity and diabetes mellitus appear to be additional risk factors. Skin debridement should be carried out very judiciously, as the debrided areas tend to demonstrate poor wound healing and have little impact on the pain. Corticosteroids have not demonstrated efficacy in the management of calciphylaxis. Infections have not been implicated in the pathophysiology of calciphylaxis; therefore, antibiotics and antifungals are not indicated. Biopsy is contraindicated in this individual as these lesions are easily identified visually.

Nigwekar SU, Kroshinsky D, Nazarian RM, et al: Calciphylaxis: Risk factors, diagnosis, and treatment. AM J KID DIS 2015;66:133-146.

Cimmino CB, Costabile RA: Biopsy is contraindicated in the management of penile calciphylaxis. J SEX MED 2014;11:2611-2617.

Question #129 **ANSWER=A**

The side effects of cytotoxic chemotherapy for metastatic testicular cancer are well-established, as BEP chemotherapy has been a mainstay regimen for decades. The major toxicity of cisplatin is neuropathy, while the most major side effect of etoposide is bone marrow suppression. Bleomycin has pulmonary toxicity risks that have also been well-documented with an incidence of approximately 10%. Pulmonary toxicity is dose-dependent, and, thus increasing in severity with more cycles of BEP. The reported fatal pulmonary toxicity after three cycles of BEP is

Montgomery RB, Lin DW: Toxicities of chemotherapy for genitourinary malignancies, in Taneja SS (ed): COMPLICATIONS OF UROLOGIC SURGERY, ed 4. Philadelphia, Elsevier, 2010, chap 10, p 119.

Question #130 **ANSWER=B**

Cystinuria is an inherited autosomal recessive disorder characterized by excessive urinary excretion of cystine. Average age at first stone diagnosis is 12.2 years. The most important factors in preventing cystine stone formation in the urinary tract are lowering urinary cystine concentration and maintaining an alkaline urinary pH. Adequate hydration with fluid intake of 3-4 L per day, with waking at night to imbibe, is recommended. Potassium citrate alkalinizes the urine and increases the solubility of cystine in the urine. Renacidin irrigation of the renal collecting system is indicated for apatite (calcium carbonate) or struvite stones. Acetohydroxamic acid enhances efficacy of antibiotic therapy directed toward UTI caused by urea-splitting organisms. Penicillamine and alpha-mercaptopropionlglycine (alpha-MPG are chelating agents that combine with cystine to increase solubility and are used when hydration and alkalinization therapies fail. Penicillamine has a higher rate of adverse reactions compared to alpha-MPG.

Lipkin ME, Ferrandino MN, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 52, p 1229.

Question #131 **ANSWER=C**

The differential diagnosis in this patient, includes cystitis, infected ventricular peritoneal (VP) shunt with secondary peritonitis, peritonitis from an alternative source (e.g., appendicitis), or perforation of the augmented bladder. The chief diagnosis to rule-out in this situation is a rupture of the bladder augment and a CT cystogram should be obtained. If a CT scan documents intra-peritoneal fluid collection around the VP shunt and the absence of a bladder perforation, strong consideration should be made for a VP shunt infection and appropriate neurosurgical evaluation is indicated. An abdominal and pelvic ultrasound may demonstrate intra-peritoneal fluid but could not differentiate an infected VP shunt with an associated fluid collection versus rupture of the augment. Cystoscopy places the individual at a higher risk of sepsis if a bladder rupture has occurred and is not as diagnostically accurate as a CT cystogram. Starting I.V. antibiotics may be appropriate, but would not allow the physician to accurately diagnose the underlying etiology. Exploratory laparotomy is not diagnostically indicated at this time.

Dahl DM: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 97, p 2290.

Question #132 **ANSWER=D**

First line therapy in patients with uric acid stones is dietary restriction of animal proteins and alkalinization of urine to pH > 6 with potassium citrate. If this fails, then increasing allopurinol to 100-300 mg/day will reduce the urinary uric acid. Alpha-mercaptopropionylglycine is used for treatment of cystine stones. Reducing sodium intake will reduce stone risk in patients with hypercalciuria. Increase in intake of fruits and vegetables does not have sufficient clinical evidence to reduce stone occurrence in patients with low urinary citrate.

Morgan MSC, Pearle MS: Medical management of kidney stones. AUA UPDATE SERIES 2015, vol 34, lesson 20, pp 188-193.

Question #133 **ANSWER=A**

In the study of animal models of erection and detumescence, there are six to seven phases that occur. In the flaccidity or detumescence phase, there are three phases. The initial event that occurs is cavernosal smooth muscle contraction (not relaxation which initiates an erection) that causes an initial rise in the intracorporal pressure. Thus, endothelial relaxation does not initially occur. This is followed by a slow pressure decrease as the reopening of the venous channels occurs with resumption of the baseline arterial flow. The final phase is a rapid drop in intracorporal pressure leading to complete flaccidity.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 26, pp 623-629.

Question #134 **ANSWER=C**

Tamsulosin, although not approved for use in children, has shown efficacy as medical expulsive therapy in children, but it is unlikely to be successful with a stone of this size, particularly since it has not entered the ureter. SWL is used in children with stones up to 15 mm, but has poor stone free rates in children with a history of urologic condition or reconstruction. Ureteroscopy and PCNL are preferred modalities in this situation, but ureteroscopic management is less invasive with excellent stone free rates for stones < 15 mm. Revision pyeloplasty is not appropriate since there was minimal hydronephrosis on recent ultrasound suggesting no evidence of UPJ obstruction.

Schneck FX, Ost MC: Surgical management of pediatric stone disease, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 135, pp 3107-3112.

Question #135 ANSWER=C

The majority of testosterone that circulates is primarily bound to serum hormone binding globulin (SHBG), with albumin and cortisol binding globulin (CBG) playing lesser roles. Only 1-3% of total testosterone circulates unbound (free). SHBG production in the liver and Sertoli cells are altered by obesity, liver disease, and nephrotic syndrome. Obese males have reduced SHBG, and thus lower total testosterone, while the free testosterone levels are generally unchanged. The excess aromatase activity in visceral fat in obese men translates into greater testosterone breakdown to estradiol, which further lowers the total testosterone level and elevates the estradiol level.

Parsons JK, Hsieh TC: Integrated men's health: Androgen deficiency, cardiovascular risk, and metabolic syndrome, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 23, p 539.

Question #136 ANSWER=B

This is a scenario of a significant arterial injury due to blind placement of a large bore trocar. The most likely injury, in this case, is either to the aorta or common iliac arteries from blind passage of a trocar. As the patient is rapidly becoming unstable, a vascular surgeon should be consulted, but immediate action is required. Simply increased insufflation pressure would not address this major vascular injury. With the trocar presumably still within the injured vessel, the trocar should be closed and kept in place, if possible, to allow for the exploratory laparotomy to be directed to the precise location of the injury. The trocar should not be completely removed as it may be providing some element of tamponade of the injured vessel. Withdrawal of the trocar from the vessel lumen, in addition to the loss of pneumoperitoneum, could result in rapid exsanguination; however, if the trocar has already been withdrawn out of the injured vessel and a laparoscope placed, attempts can be made to assess the degree and site of injury laparoscopically. Rapid conversion to exploratory laparotomy should be performed, especially in the scenario of cardiovascular collapse. In such a case, the trocar and laparoscope can be angulated along the anterior abdominal wall, allowing for rapid cut down onto the trocar. As this particular patient is in rapid clinical decline, adding an additional trocar or converting to a hand-assisted technique to attempt to repair the injury laparoscopically would be too time consuming and potentially dangerous. However, in a more stable situation, both may be reasonable approaches depending on the laparoscopic experience and skill level of the surgeon.

Ordon M, Eichel L, Landman J: Fundamentals of laparoscopic and robotic urologic surgery, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 10, p 218.

Question #137 **ANSWER=E**

The patient is bothered by his disease, and his condition is unlikely to improve; therefore, reassurance would not be an appropriate option. Additional collagenase would be considered off-label use as only eight injections are currently indicated for treatment. In addition, collagenase injections are only indicated for greater than 30 degrees of curvature. There is no data to suggest that switching to verapamil injections would offer a better response and verapamil injections are considered off-label use. A penile plication should be avoided in men with moderate ED. The best option is insertion of penile prosthesis.

Nehra A, Alterowitz R, Culkin DJ, et al: PEYRONIE'S DISEASE: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2015; 194: pp 745-753.
http://www.auanet.org/education/guidelines/peyronies-disease.cfm

Question #138 **ANSWER=A**

Groin/thigh pain after transobturator sling in women with thin, athletic builds is not uncommon. Indeed, some experts believe women fitting this description should preferentially undergo a retropubic mid-urethral sling, rather than a transobturator sling. If a patient should develop groin/thigh pain following a transobturator sling, conservative therapy with NSAIDs for analgesia and the passage of time should resolve the majority of symptoms. If, however, the pain persists after six to eight weeks, consideration for referral to a pain clinic for trigger point injections and a physical therapy consultation may be of benefit. Sling urethrolysis and removal should be reserved for recalcitrant problems failing the aforementioned interventions.

Dmochowski RR, Osborn DJ, Reynolds WS: Slings: Autologous, biologic, synthetic, and midurethral, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 84, pp 2031-2033.

Question #139 **ANSWER=B**

This patient is at risk for a local recurrence and this may present as a fistula, especially with a history of XRT. Biopsy is indicated rather than fulguration. He eventually may need resection and appropriate therapy, but radical surgery is not indicated until a diagnosis is confirmed.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, p 2103.

Question #140 **ANSWER=E**

An injury to the vertebral column at L-4 injures the cauda equina, and depending on the extent of neural damage, will produce a loss of motor and sensory fibers to the bladder, pelvic floor, and external sphincter. Detrusor sphincter dyssynergia is produced by suprasacral spinal cord lesions that interrupt the ascending and descending pathways between the sacral spinal cord and the center for reflex detrusor and urethral function in the brain stem. Reflex detrusor function requires sacral root and sacral cord integrity. While an areflexic bladder faces fixed internal sphincter activity, that activity is normal and not truly dyssynergic. Since within the sacral and lumbar canal the nerve roots are intermingled, a lesion that produces detrusor areflexia would be expected to have a similar effect on the external sphincter, hence, the denervation potentials.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, pp 1773-1775.

Question #141 **ANSWER=A**

According to the 2015 AUA Guideline on Peyronie's, NSAIDS are an appropriate treatment option for men presenting with penile pain in the active phase. Vitamin E is not recommended as a treatment option for men with Peyronie's disease. Pentoxifylline and penile stretching device are considered off-label use for the treatment of Peyronie's disease. Finally, intralesional collagenase injections should only be offered during the stable phase of the disease. No oral agents, such as Potaba, other than NSAIDS are indicated for the treatment of Peyronie's disease.

Nehra A, Alterowitz R, Culkin DJ, et al: PEYRONIE'S DISEASE: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2015;194:745-753.
http://www.auanet.org/education/guidelines/peyronies-disease.cfm

Question #142 **ANSWER=D**

Unlike conventional laparoscopy, a robotic instrument must first be successfully engaged to the instrument faceplate before it can be advanced into the operative field. During routine exchange of a robotic instrument, a safety mechanism is built into the system that allows for safe and automatic return of the instrument tip to 1 mm short of the final position of the prior instrument. In addition, the precise trajectory of the previous instrument is saved, allowing the new instrument to return to the same exact location by simply advancing the instrument once engaged by the faceplate. This feature is called the guided instrument exchange. Although all laparoscopic and robotic instruments should be inserted under laparoscopic view, this safety feature, in essence, returns the new instrument to nearly the exact same location, thus obviating the absolute need for the console surgeon to visualize the actual insertion and advancement of the new instrument tip. Taken together, this guided instrument exchange safety feature prevents "past pointing" of the new instrument into surrounding vital anatomy, whether by gentle or forceful insertion. However, once the clutch button of the robotic arm is reset, this safety mechanism is lost and the instrument requires manual introduction under laparoscopic view in coordination with the console surgeon. In the above scenario, the bedside assistant likely activated the clutch button accidentally, thus releasing the safety mechanism. Proper and successful engagement of the instrument to the faceplate would not be possible if the instrument was defective or the instrument faceplate was dislodged.

AUA Urologic Robotic Surgery Course: Fundamentals of Robotic Surgery (https://www.auanet.org/education/modules/robotic-surgery/module1.cfm)

Question #143 ANSWER=A

Renal artery stenosis is estimated to be the etiology of elevations in blood pressure in < 1% of the total hypertensive patient population and in 10-20% of patients with refractory hypertension. The radiographic presence of renal arterial stenosis alone, is not, however, adequate justification to warrant a correction in a hypertensive patient. The stenotic lesion must be functionally significant, in essence, reduce blood flow in an amount sufficient to activate renin release. Classically arteriographic findings associated with an increase in renin secretion are renal arterial narrowing exceeding greater than 75 percent or greater than 50 percent renovascular stenosis with post-stenotic dilation. However, the exact degree of renal artery stenosis that would justify revascularization is not known. In patients found to have a 50% or greater arterial stenosis, duplex Doppler ultrasonographic scanning is recommended. This test is noninvasive, relatively inexpensive, can be used in patients with any level of renal function, and is both sensitive (98%) and specific (98%) for the presence of renovascular induced hypertension. Currently, this patient is asymptomatic with excellent blood pressure control and with a normal Doppler ultrasound study. Serial monitoring of blood pressure and renal function are sufficient for follow-up. In patients with a 75% narrowing, 10% may progress to complete occlusion within two years and up to 60% will progress to stage 3 or higher renal failure within six years. Consideration for interval radiologic follow-up is usually added to the follow-up protocols in this asymptomatic patient population. Split differential renal vein renin measurements are now performed very infrequently because of their limited clinical utility and need for invasive catheterization. A renal vein renin ratio of greater than or equal to 1.5 (affected to non-affected side) is considered significant for the presence of renin-dependent hypertension; its clinical utility in being able to determine who will respond to renal revascularization is controversial. However, it has been found to be useful for prognostic purposes in pediatric patients where there is an ipsilateral diminished renal function (less than 25%) and nephrectomy is a consideration for resolution of hypertension. Percutaneous transluminal balloon angioplasty +/- stenting is not indicated in this patient who does not have renovascular hypertension. Randomized, controlled trials comparing renal stent placement with balloon treatment alone have documented procedural superiority for primary stent placement. The need to re-intervention in the percutaneous transluminal renal angioplasty group is approximately three-fold higher (48%) compared with that of the stent group (14%). The reduced restenosis with stenting compared with angioplasty alone was not, however, associated with a significant difference in benefits in hypertension control or renal function.

Gulmi FA, Reiser IW, Spitalewitz S: Renovascular hypertension and ischemic nephropathy, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 45, p 1028.

Question #144 ANSWER=B

The primary and direct mechanism by which angiotensin II (ATII) maintains GFR during hypoperfusion is by efferent arteriolar vasoconstriction. The effect of vasoconstriction is greater for the efferent than afferent arteriole. ATII causes a decrease in renal medullary blood flow rather than an increase. ATII may result in renal artery constriction during hypovolemia. ATII increases aldosterone production that affects the cortical collecting tubule, activating sodium channels resulting in net sodium and water absorption.

Shoskes DA, McMahon AW: Renal physiology and pathophysiology, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 44, pp 1009-1010.

Question #145 **ANSWER=A**

Urethrocutaneous fistula is a complication of hypospadias repair. Although all of the choices listed may reduce fistula recurrence, the most important step for a successful outcome of fistula repair is evaluation for and assurance of absence of urethral stricture distal to the fistula site. Repair, therefore, needs to include assessment for distal obstruction as well as excision of the fistula tract with closure of the urethral opening and vascularized flap coverage over the defect. Successful fistula repair requires healthy skin and subcutaneous tissue immediately surrounding the fistula site. In general, urethral stenting does not impact outcome following a straight forward urethrocutaneous fistula repair, and post-operative care requirement should be minimal.

Snodgrass WT, Bush NC: Hypospadias, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 147, p 3419.

Question #146 **ANSWER=E**

The patient has a vocational indication for stone removal. The procedure most likely to render him stone-free in a single procedure is ureteroscopy. As the stones are in the kidney, medical expulsive therapy is not indicated. The patient has not yet undergone metabolic work-up, so potassium citrate at this point is premature. SWL will not permit a bilateral treatment in the same session, and does not provide for immediate stone clearance so that the patient may resume his vocation.

Pearle MS, Goldfarb DS, Assimos DG, et al: MEDICAL MANAGEMENT OF KIDNEY STONES: AUA GUIDELINE: AUA GUIDELINE. American Urological Association Education and Research, Inc, 2014. http://www.auanet.org/education/guidelines/management-kidney-stones.cfm

Question #147 **ANSWER=C**

The use of a conventional Hasson trocar following balloon dilation in retroperitoneal laparoscopic procedures is often fraught with unique challenges, including leakage of gas around the trocar despite securing fascial sutures to the cone portion of the Hasson trocar. This occurs as the initial fascial incision is often larger than the size of the 12 mm trocar allowing for diffusion of CO_2 gas around the trocar and into the subcutaneous space. Subsequent systemic absorption of the subcutaneous gas results in hypercarbia. With the advent of balloon access trocars, this problem is less common than with standard 12 mm trocars that may not form as tight a seal against the fascia. The retention doughnut-shaped balloon placed on the inside of the fascia and peritoneum is secured against a foam cuff on the outside of the fascia creating a tight seal, thus minimizing gas leakage around the trocar. This patient is healthy and has no history of underlying pulmonary disease. A rupture of an occult pulmonary bleb would result in a pneumothorax but not subcutaneous emphysema. Entry into the peritoneal cavity would not necessarily increase the risk of hypercarbia. Lastly, there is no mention of bleeding or entry into a large vascular structure that would lead one to suspect venous absorption of gas.

Ordon M, Eichel L, Landman J: Fundamentals of laparoscopic and robotic urologic surgery, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 10, p 201.

Question #148 **ANSWER=E**

Asymptomatic renal stones in native kidneys do not require any pre-operative intervention. Thus, this patient should proceed with renal transplantation and the stone does not need to be addressed with procedures such as SWL, ureteroscopy, PCNL, and nephrectomy.

Gritsch HA, Blumberg JM: Renal transplantation, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 47, p 1069.

Question #149 **ANSWER=D**

Fowler's syndrome, first described in 1985, refers to the development of urinary retention in young women in the absence of overt neurologic disease. The typical clinical history is that of a woman younger than 30 years who has found herself unable to void for a day or more. It is noteworthy that 50% of affected patients will be found to have polycystic ovaries in association with the urinary pathology. Patients classically will not complain of urinary urgency, but invariably complain of increasing lower abdominal pain and discomfort. Clinical suspicion for Fowler's syndrome should be given if a young woman is found in urinary retention, bladder capacity of over 1 L, with no sensation of urinary urgency. On needle electrode, electromyographic (EMG) examination of the external urethral sphincter, abnormal EMG activity with complex repetitive discharges, and decelerating bursts will be noted. This abnormal EMG electrical activity impairs external urinary sphincter relaxation. Simultaneous CMG studies reveal excellent bladder compliance associated with detrusor acontractility. Due to the absence of detrusor contractility, true detrusor external sphincter dyssnergy is not seen. While the same EMG abnormality on occasion may be found in women with obstructed voiding, it will not be associated with detrusor acontractility; rather, the patient will be found to have high voiding pressures and low urinary flow rates.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, p 1789.

Question #150 **ANSWER=E**

The CHAARTED trial has shown clear survival benefits to ADT and docetaxel chemotherapy in the setting of high volume, hormone-sensitive, metastatic prostate cancer. In the pivotal trial, Sweeney, et al, showed an HR of 0.61 (0.47-0.80), p=0.0003, with median overall survival advantage from 44.0 months to 57.6 months for the entire cohort. Specifically for the high volume disease, the HR was 0.60 (0.45-0.80), p=0.0006 with median overall survival advantage from 32.2 months to 49.2 months. The STAMPEDE trial has shown similar results, thus, confirming the efficacy of cytotoxic chemotherapy with ADT in the hormone-sensitive metastatic setting. While ketoconazole could certainly aid in attaining castrate levels of testosterone, this patient does not display impending pathologic fracture or cord compression, and there is no clear indication for the addition of ketoconazole. Sipuleucel-T, enzalutamide, and abiraterone are all approved only for metastatic castration-resistant prostate cancer.

Sweeney CJ, Chen Yu-Hui, Carducci M, et al, Chemohormonal therapy in metastatic hormone-sensitive prostate cancer. NEJM 2015;373:737-746.